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EDITORIAL.

WHEN lamented "Artemus Ward" proposed, during our civil war, to raise a regiment of troops, in order to head off all strife and controversy as to who should be officers, he adopted the ingenious method of having the entire regiment composed of brigadier-generals. In like manner, our Centennial Commissioners, scenting afar off the troubles which would arise from making any discrimination between exhibitors of chemicals, drugs, and pharmaceutical preparations, wisely abstained from placing on the committee of judges any one who was in the least degree familiar with the latter classes of exhibits; and then, to make it quite sure that nobody should feel aggrieved, they practically gave a medal to each exhibitor, and have thus far abstained from publishing any statement of the special reasons, if they had any, for the several awards. Everybody, therefore, is a "brigadier-general;" each one has his medal, and the only source of unhappiness is the dread that the Commissioners may publish a detailed report.

THE long-expected opening of the New York Aquarium at length took place on the 10th inst., and led to an unusually intelligent and appreciative gathering of people, among whom were most of the leading scientific men of the city and vicinity. Owing to the desire on the part of the managers to open the rooms to the public at the earliest moment, some few things yet remained to be done which have by this time been quite finished, and we now have the first marine and fresh-water aquarium of any considerable size in this country, and one which has but few superiors in Europe, where large aquaria have been in operation for a number of years. When we consider the advantages which New York possesses for keeping up and stocking an aquarium, and the success which has followed their establishment abroad, it is a matter for surprise that it has not been brought about before now. Indeed, it is some time since Mr. W. C. Coup proposed to construct an aquarium in Central Park, with the purpose of turning it over to the city whenever it should have covered the outlay by a small admission fee. But the charter of the park prohibited a charge for admission to any building or exhibit on the grounds, and Mr. Coup was obliged to secure another site for carrying out his project. The result has been that a building has been erected specially for the aquarium, at the junction of Broadway with Thirty-fifth street; and Charles Reiche & Brother, well-known importers of rare and valuable animals, are associated with Mr. Coup in the financial management of it. The direct superintendence of the aquarium is in the

hands of the following-named gentlemen: Prof. H. D. Butler, General Superintendent; Prof. W. S. Ward, of the Rochester University, Naturalist and Director of the Educational Department; Mr. Fred. Mather, of the U. S. Fish Commission, Superintendent of Fish Culture; Mr. A. W. Roberts, in charge of Fisheries and outside collections; and Mr. F. T. Vance, Illustrative Artist.

A feature of the aquarium, which is new in such exhibitions, is the practical working of hatching fishes' eggs. A quantity of California salmon eggs, about the size of peas, were so far advanced at the time of the opening night that the little fish could readily be distinguished inside. Another thing which appeals at once to the interests and sympathies of scientific men is the free laboratory, with all the apparatus necessary for original research, together with a library, which the managers have placed at the service of any one who really desires to study this branch of natural history, or become familiar with the structure and mode of life of the various animals which fill their tanks. Professor Ward, who is directly in charge of this department, and who is its originator, is known to be one of the foremost naturalists of this country; his museum and laboratory in Rochester rivalling the one in Cambridge, which Professor Agassiz built up.

In taking this step the managers have really done more to further the study of natural history than was possible with the school on Penikese Island, founded by Professor Agassiz; for the isolated situation of the latter placed it beyond the reach of all but a very limited number, and indeed rendered it impossible to continue it after the death of its originator; while the laboratory of the New York Aquarium, being in the midst of the city, offers opportunities for study to many who, with a few leisure hours, it may be, at their disposal, can devote them to observation without the labor and expense necessary for the support of private collections of a size which would furnish them with the requisite materials.

It is true that but few articles of our materia medica are now derived from the sea and its tributaries, but these few are of no inconsiderable importance and would alone justify the notice which we have given of this new venture; but when we consider the value of an institution like this as a source of popular information regarding natural objects, the influence it may have in stimulating a taste for the natural sciences makes it of greater personal interest to physicians than any other class of the community, and we hope that they will show their appreciation of its merits by their patronage and personal influence in its favor. The whole building is chiefly occupied by one large room, lighted from above and at the sides. Around the walls are arranged more than fifty tanks, the longest one of which has a front of sixty-five feet—there being but one longer than it in the world—and is devoted to shark, turtles, porpoise, sturgeon, halibut, and other large forms of marine life. Adjoining this long tank is a series of sixteen smaller ones, occupying a space one hundred and fifty feet long, and containing both salt and fresh-water fish, crustaceans, polyps, etc. A large tank in a farther corner is devoted to trout, and over thirty table-tanks of all sizes line another side of the room. At one end a deep pool and a mass of rock-work furnishes an abode for the sea-lions. A circular tank in the centre, thirty feet in diameter, contains a lively young whale, and another one of little capacity, sunken in the floor, has already two seal. The interior of the large room is tastefully decorated with rustic work, copies of antique statuary, and beautiful plants.

Following the addresses by the Hon. Robt. B. Roosevelt and Professor Ward, the company were invited to a supper which was furnished by the U. S. Fish Commission, and was so novel in character that we are tempted to reproduce the menu as an evidence of what a magnificent future is opened to us by the successful pursuit of pisciculture.

SOUPS.

Green Turtle, a la Blackford.
Bisque of Lobster, Seth Green Style.

HORS D'ŒUVRES, CHAUD.

Bouchees of Craw Fish, a la Remy.
Fried Oysters, Fergusson Style
Fried Scollops, a la Edmunds.

HORS D'ŒUVRES, FRIED.

Mackerel in Oil—Norway. *Mackerel, Fried*—Norway.
Halibut—Norway. *Salmon*—Norway.
Pluck Fish—Norway. *Canned Mackerel*—Norway.
Anchovies—Sweden. *Mackerel*—Sweden.
Conger Eel—Portugal. *Squid in Oil*—Portugal.
Sardines in Oil—Portugal. *Sole in Oil*—Portugal.
Congro in Oil—Portugal. *Mackerel in Oil*—Portugal.
Conger Eeel with Tomatoes —Spain. *Sardines in Oil*—Spain.
Sardines in Vinegar—Spain.
Mixillon—Spain. *Fried Bass*—Spain.
Botargo (Mullet Roes)—Turkey.
Cray Fish, Cape of Good Hope—Africa.
Shake, Dried Salmon—Japan.
Sardines—France. *Anchovies*—France.
Tunny—France.
Salmon—Holland.
Shark Fins, Black—China. *Shark Fins, White*—China.
Oolachans—Alaska. *Sardines*—Italy.
Caviar—Russsia. *Poisson au Blanc*—Russia.
Caviar—California.
Dried Octopus Eggs—China. *Dried Fish Maws*—China.
Sword Fish—Portugal.

RÉLÉVES.

Striped Bass, a la Brevoort. *Pompano*, a la Reeder.

ENTRÉES.

Caisse Terrapin, a la Norris. *Deviled Crabs*, Gill's Style.
Fillet of English Soles, a la Buckland
Turbot, a la Whilcher. *Timball of Frogs*, a la Cost.

VEGETABLES.

Potatoes, Parisienne. *French Peas.*
French String Beans. *Stuffed Egg Plants.*

ROAST.

Sheep's Head, Agassiz Sauce. *Blue Fish*, a la Goode.

COLD PIECES.

Aspic of Eels, a la Huxley.
Buisson D'Ecrevisses, a la Atkins.
Salmon, a la Baird, Buerre de Montpelier. *Lobster Salad.*

ORNAMENTAL PIECES.

Bateau de Picheur, a la Roosevelt.
"Fisherman's Luck," a la Shephard Page.

Fruits. Cheese. Coffee.

NEW YORK DRUG MARKET.

[Prices given are for large lots from Importers' and Manufacturers' hands. For single packages an advance would be charged.]

ALTHOUGH the trade can hardly be said to be in a flourishing condition, there does exist a somewhat better feeling on all sides, caused principally by good business done in some special lines. The western and southern dealers, many of whom have been in the city during the last month, also speak cheerfully of their trade and report it as brisk and as a rule, prompt in settlement. The great Exhibition has also put some life into business, in the great numbers of people that it has set in motion, and the hotels have never been so full, nor the railroads and steamboats so crowded as they are now, and have been for some weeks past. This has had its influence in raising the spirits of the despondent ones, and has showed them that the country has not gone to pieces yet, and that one great reason for the previously stagnant condition of affairs, was the universal want of confidence, and the rigid economy, forced or voluntary, that the whole nation has been practising. There seems, however, to be a very general feeling that bottom has been reached, and that the people can spend their money if they will. This has been shown by the large numbers that have come from great distances to visit the Centennial, and while most of our visitors have been anything but lavish in their expenditures, they have nevertheless spent, as a whole, large sums of money in the thousand and one ways that a great crowd will, thus setting in motion millions of ready cash that have been of great service to the storekeepers, both large and small. Some of our sister trades have felt all this very decidedly, and being in a position as regards prices where any change must of necessity be for the better, have been doing a large and paying business. Many of the large mills have resumed work, and some have voluntarily advanced the rate of wages, so that, in the dry-goods trade most especially, a very cheerful tone prevails. Our turn must come before very long, and till then, let all hands look and talk more hopefully, so that the good times, when they do come, will not, like a hearty meal to a starved man, be more than our weakened systems can stand.

Opium, during the latter part of September, weakened quite decidedly, and $6.00 gold was the ruling price. The weakness was, however, more artificial than natural, and under large purchases both here and abroad, the price has become quite firm, although not as yet any higher.

Morphia remains as last quoted: $4.75 for P. and W. Some outside lots are offered at a shade less, but the market, as a rule, is firm.

Quinia has attracted considerable attention from speculators, as there was fear at one time that manufacturers would be unable to meet the demand. Sales of large lots were made at $3.00 @ $3.25 pr. oz. for P. and W., and at one time $3.50 was demanded, but we hear of few sales at the latter figure. Later on, the price weakened rapidly, until, at this writing, outside lots can be had at $2.42½ @ $2.45, manufacturers' price being $2.50.

Quicksilver dull and without change, general quotation 51c. gold.

Mercurials remain unchanged, quotations being for blue pill 45c., corrosive sublimate 66c., mercurial ointment 40c. and 50c., red precipitate 86c., white precipitate 96c.

Borax in moderate demand and at slightly easier figures, city refined being quoted 11c. @ 11¼c., California 10⅜ @ 11c.

Blue vitriol steady and in good demand, but little being obtainable under 7⅞c., the manufacturers generally demanding 8c.

Alum is scarce and in brisk demand, prices since our last having advanced to 2¾ @ 2⅞c., for lump, ground 2⅞ @ 3c.

Salts are without change, Epsom selling at 2c., Rochelle 31 @ 31½c.

Arsenic quiet but firm at 3½c. gold for powdered.

Camphor quiet but very firm at 27c. for city refiners.

Citric acid dull and weak at 80 @ 81c. gold, being without change.

Tartaric acid a shade lower, crystals being obtainable at 42c. gold, and powdered at 47½ @ 48c.

Oxalic Acid has been largely sold, and the price advanced materially. Just now 11 @ 11½c. gold is wanted, with but little obtainable at the lower figure.

Cream Tartar firmer and somewhat higher, the market for French being 32c. gold; American, 30½ @ 31c. gold.

Chlorate of Potassium has been in active demand from the print mills, and sales have been made at rising figures. At the close, Greenbank is held at 25c. gold; other brands, 24 @ 24½c. gold.

Iodide of Potassium unchanged. P. & W. $2.45 @ $2.55 for bulk and bottles.

Prussiate of Potassium dull at previous prices, viz., 26c. for American.

Bi-Carbonate of Potassium—Scotch and American are quiet but firm at 14½ @ 15c.

Carbonate of Ammonium continues in good demand at 14½c. gold for English.

Muriate of Ammonium quiet and unchanged, ruling at 10½ @ 10⅝c. gold.

Sulphate of Ammonium slightly easier, American being obtainable at 4½ @ 4⅝c.

Iodine slightly lower, resublimed being obtainable at $3.30.

Acetic Acid sells as wanted at 5½ @ 6c. for 8.

Cuttle-Fish Bones are not obtainable under 35c., the small stock now on hand being concentrated.

Venice Turpentine is in small stock, and firmly held by a few holders, who have taken up all the floating lots. Sales were made at 20c., but price is now firmly held at 25c.

Balsam of Copaiba—recent large arrivals have overstocked the market, so that prices have declined. Large sales have been made, principally for speculation, the jobbing price being 45 @ 46c.

Balsam of Tolu quiet at $2.50, which is an advance since our last of nearly one hundred per cent.

Burgundy Pitch without material change, 6½c. being the ruling figure.

Cubebs dull and lower, prime berries being obtainable at 8½ @ 8¾c.

Cassia Buds quiet and unchanged, and can be bought at 38 @ 40c.

Lycopodium is still quoted at 42½ @ 45c.

Guarana, as last reported, being quite firm at $3.00 for lump.

Squills dull and lower, ruling price for prime quality being 9¼ @ 9½c.

Arnica Flowers are scarce and high, but few being obtainable at 13c., some holders asking as high as 14c.

Chamomile Flowers—German can be bought for 35 @ 40c. as to quality. Roman of old crop 20 @ 12c. New crop are scarce and high.

Rhubarb continues in large stock, and prices are decidedly lower. Nominally prime root is held at $1.50 @ $1.75, but purchases could be made at much lower prices. Poor quality, 70 @ 80c.; good, 90c. @ $1.10.

Ginseng without change, prime southern being quoted at $1.15 @ $1.20.

Seneka Root has been in good demand for export, and higher figures have been paid. For prime southern 75 @ 80c. could be obtained.

Ipecacuanha dull and without change; quoted at $1.00 @ $1.05 gold.

Jamaica Ginger without material change; prime bleached selling at 18½ @ 18¾c.; unbleached 17 @ 18c.

Ergot under recent arrivals has weakened, and can now be bought at 75 @ 80c.

Tonqua Beans about as last reported, selling moderately at 80 @ 85c. for Angostura.

Cochineal has been in very active demand, both from the mills and on speculation. Prime Honduras has advanced to 65c. gold, and other descriptions proportionately.

Castor Oil in slightly improved demand, at firm figures. Baker's A. A. in cases, 11 @ 11½c.; western brands, 10¾ @ 11c. The growing crop is estimated to be much smaller than last year.

Gum Assafœtida in moderate demand, but light stock. Good tears bring 13c., fair 12c., and lower grade 11½ @ 12c.

Gum Shellac has been largely sold, and under a brisk demand has advanced to 44 @ 45c. for D. C. Stocks are pretty well concentrated, and holders are very firm.

Canary Seed has been in active demand, and recent arrivals have been quickly sold, in consequence of which prices have advanced quite sharply. Prime Sicily and Spanish, $4.00; Dutch and Smyrna, $3.78 @ $3.75.

Hemp Seed, recent arrivals have sold lower, and prime Russian can now be had at $1.90.

Mustard Seed as last reported, California and English yellow bringing 9¼ @ 9½c.

Fennel Seed scarce and decidedly higher, recent sales having been made at 18c. for prime German.

Essential Oils are quiet, and some kinds slightly lower. Sanderson's Lemon, $3.15; Sanderson's Bergamot, $3.85; Oil Cassia, 87½c.; all gold. Oil Sassafras unchanged, being still obtainable at 48c. H. G. H. Oil Peppermint, $3.50; L. B. H., $3.37½; H. & P., $3.25.

MATERIA MEDICA.

The Chicago Botanical Garden.

"AUSTRALIA, which was peopled in the year 1870 by less than one million of inhabitants, can point to five botanical gardens established within its borders. There are five also in South America. That in Calcutta is more than one hundred years old, and covers two hundred and sixty acres of ground. Java possesses in the Buitenzorg probably the largest garden in the world, as it includes two hundred and seventy-two acres of ground, and furnishes sites for plant culture at elevations from 4,500 to 10,000 feet above the level of the sea. Up to within a recent date there was but one botanical garden in North America—that connected with the University of Harvard. We say but one, for it is well known that the Government gardens at Washington subserve chiefly the purpose of providing bouquets for members of Congress, while that at St. Louis—small, popular, and showy—is scarcely adapted to the study of botanical science. The Cambridge garden, now seventy-five years old, is completely filled with collections obtained from the botanists of the United States; but its chief usefulness has been to enable Professor Gray to advance his botanical researches. It covers ten acres of ground, and to this space has been recently added an arboretum.

"The Chicago Botanical Garden has been called into existence so noiselessly, and has accomplished its work thus far so unpretentiously, that there are many who will first learn of its existence from the perusal of these pages. Curiously enough, the largest number of those who are familiar with its aim and labors are residents in foreign lands.

"The Chicago garden was created by the action of the South Park Commissioners, who organized a Board of Management, consisting of Judge H. N. Hibbard, Gov. Wm. Bross, and Messrs. E. H. Sargent and Albert Ebert. Prof. H. H. Babcock, the eminent Chicago botanist, was appointed Director. The garden is located in the southeast corner of the northern and western of the two south parks. Fifteen acres are allotted for the garden proper, which now contains plants arranged

in their natural order, and sixty additional adjacent acres have been assured for further use. Three-fourths of this latter space will be occupied as an arboretum, in which the pines, oaks, maples, etc., will be separately arranged, and special provision will be made for medicinal plants, which will also be systematically grouped.

"It is safe to say that a botanical garden was never before established which has, in a similar space of time, accomplished the results which the management now actually exhibit. Since the date of organization, on the 10th of April, 1875, eight thousand packets of seeds and living plants have been received here from England, France, Germany, Russia, Italy, Austria, Hungary, Java, Australia, Chili, South Africa (Cape of Good Hope), Calcutta, and various portions of the United States, the latter chiefly from the garden at Cambridge. These represent about 6,000 living species. During the same time, also, about 2,000 packets of living plants and seeds have been exported to various parts of the world, principally in exchange, to the countries mentioned above. It may be added that these exchanges have been eagerly sought for abroad, and that nothing could exceed the cordial and even enthusiastic support accorded to the Chicago enterprise by strangers who have proved themselves friends in these remote quarters of the globe. As an illustration of this fact, it may be mentioned that it has actually been found more difficult to obtain collections from various parts of this country than from Java and South Africa.

"To-day the four houses, heated by warm water, and so arranged that the temperature in each may be adjusted to a degree, are crowded to their utmost capacity. Many tropical plants have reached to the glass roofs and turned downward in accordance with the demands of a vigorous growth. Specimens of the *Eucalyptus Globulus*, grown from Australian seed twelve months ago, are now fully twelve feet in height. Among the medicinal plants to be seen there are several varieties of hyoscyamus, aconite, and arnica.

"This success has been largely due to the indefatigable labors of Prof. Babcock, who, prior to the inauguration of the scheme, despatched 15,000 herbaceous specimens to Java, Belgium, Calcutta, Australia, Sicily, and Chili; and the garden was not slow in reaping the reward of this generous insemination. The Board of Management were also fortunate in securing the services of a skilled gardener, who had served five years in the botanical gardens at Kew, and had also been for five years in charge of the garden at Belfast, Ireland.

"A register of visitors, kept upon the grounds, records at present 327 names, representing a large number of gentlemen from outside the city—those from Boston, Philadelphia, New York, and Washington preponderating.

"Our object in thus prominently calling attention to the Chicago garden is to aid in furthering the judicious aims of the Board of Managers. The ultimate and permanent success of their scheme will depend largely upon the success which they achieve in awaking not only a popular interest in the botanical garden, which is eminently desirable, but also in securing the moral support and encouragement of men of culture and science in the city and its environs. Such success will involve the development, among the masses of our people, of a taste for horticulture and arboriculture, as well as of a tendency to seek that highest form of recreation from the cares of business which is afforded by the direction of the mind to the practical study of natural sciences. In England and elsewhere, it is not rare to find clergymen, barristers, and gentlemen eminent in various professions and stations of life, resorting to this class of studies as a source of recreation and amusement, and often they attain a truly remarkable degree of proficiency in their favorite science. Such a state of society will obtain more and more in this country, as capital accumulates its surplus and the means of generous living are placed at the disposal of men in the middle ranks of life. In the territory around Chicago—a city destined without doubt to be the metropolis of a continent, its feet resting on a soil which is a treasure-house of vegetable and mineral wealth, its arms reaching out to the embrace of an empire of unparalleled productive resources—such conditions as those described will inevitably arrive.

"Meanwhile, we believe that we express the sentiment of the medical profession of our city in expressing the hope that the South Park Commissioners will continue to support and extend the work of the Chicago Botanical Garden in the liberal and far-seeing spirit with which it has been projected and thus far developed."—Editorial in the *Chicago Medical Journal and Examiner* of October.

New Caledonia Nickel.

THROUGH the explorations of M. Garnier, New Caledonia now yields a green mineral, consisting of hydrosilicate of nickel and of magnesia, which appears destined to acquire considerable industrial importance. The mineral is found in the midst of very abundant masses of serpentine at various points of the island, and in association with euphotides, diorites, amphibolites, and other magnesian rocks. Sometimes this combination of nickel shows itself on other rocks in the form of a fine green covering; at others, it penetrates the rocks and colors them intensely; and again it is found in both filaments and in nodules. As might be expected, the nickel is accompanied by iron, cobalt, and chromium, almost invariably. The metallurgical treatment proposed by MM. Christofle and Bouilhet is quite simple. The material dissolved in hydrochloric acid is precipitated by lime under form of a nearly pure nickel oxide. Reduction by charcoal easily gives a metal 99 per cent. fine, incomparably purer than that obtained from the sulphuretted and arsenious ores hitherto employed. It is not, however, in the free state that the metal is best used. As

combined with copper in the proportion of 15 per cent. nickel and 85 of copper, a white, malleable, and very fine alloy is produced, excellently suited for all metallurgical manipulations.—*Scient. Amer.*

Cresotic Acid and Sodium Cresotate.

Both of these substances have been experimented with by Dr. C. F. Buss, assistant at the Medical Clinic of the University of Basle, as to their antipyretic action. Cresotic acid being homologous to salicylic acid, led to the presumption that their therapeutic action must likewise be similar. The observed results, especially in cases of fever, leave no doubt that cresotic acid is a most effective antipyretic remedy, corresponding in its action to quinia or to salicylic acid. Sodium cresotate was administered in doses of 6 to 8 gms. (about $1\frac{1}{2}-2$ ʒ). After its administration the patients sometimes complained of a bad taste, but never of disagreeable sensations; sometimes it produced humming in the ears, but very rarely hardness of hearing after a few hours.

Cresotic or carbocresylic acid, $C_8H_8O_2$, is derived from cresol or cresyl-alcohol (C_7H_8O) in the same way as salicylic acid ($C_7H_6O_3$) is from phenol or phenyl-alcohol (C_6H_6O), by passing carbonic acid gas into cresol (or phenol) containing metallic sodium. The cresotic acid crystallizes from its hot watery solution in colorless prisms. It is sparingly soluble in cold water, readily in ether, alcohol, and alkaline solutions. Ferric chloride produces the same violet coloration as salicylic acid. Comparative experiments will have to be made to determine which of these two acids has stronger antipyretic powers.—*Pharm. Centralb.*, 1876, 273.

On Raffinose.

D. Loiseau has met with a new saccharine body, which he called raffinose, while investigating the conditions of greatest yield of sugar from molasses. When pure, it forms crystals of varying dimensions, the smaller ones being white. It is almost insoluble in 90 per cent. alcohol at 20°C.; water at 20° takes up about one-seventh of its own weight, while water at 80° dissolves it in all proportions. It has a greater rotary power than sugar; if that of the latter be set at 100, raffinose rotates to 159. On heating it to 100°C, it loses 15.1 per cent. of water; and its formula (old) is probably $C_{18}H_{16}O_{16}+5HO$.—*Chem. Centralbl.*

The Mineral Waters and Baths of Chile.

The *Edinburgh Medical Journal* of August has an article by Dr. John Boyd on the "Medical Society of Chile," in the course of which the following account is given of the medicinal springs of the country:

Mineral Waters.—Chile possesses a great number of mineral and thermal waters, but only a small proportion of these has been utilized for the benefit of the sick. Almost all of them are found at the foot of the Andes, or on its declivity; the most celebrated and most frequented being the following:

1. *The Baths of Chillan*, situated at 1,864 metres above the sea-level, in a volcanic region, little distant from the perpetual snows. Of its various affluents, the most important is the sulphurous, the temperature of which reaches 58° (136.4° Fahr.). From their high elevation, these are only accessible during the summer months, and the accommodation for patients is middling. In other respects, the access is sufficiently easy.

2. *The Baths of Cauguênes*, on the banks of the river Cachapol, and at 677 metres above the level of the sea. They are alkaline waters, varying in their temperatures in the various springs from 35° to 47° (95° to 116.6° Fahr.). The establishment can vie in every respect with the most celebrated in Europe.

3. *The Baths of Apoquindo*, a few leagues to the east of Santiago, at a height of 799 metres. They are equally alkaline, although less concentrated, and the different streams have a temperature from 17° to 28° (62.6° to 82.4° Fahr.). At these baths may also be found every accommodation for the infirm and other visitors.

Equal convenience may be found at the baths of *Colina*, situated at 10 leagues to the north-east of Santiago, at an elevation of 909 metres. The temperature of the waters is from 25° to 32° (77° to 89.6° Fahr.). This contains a small quantity of alkaline principles in solution; they are nevertheless very efficacious in certain maladies.

In all the other baths, which, from their chemical composition, might be even preferable, there has not been the slightest trouble taken to gain access to them easily, or to supply the means of lodging or living there with any comfort. It is necessary to bring all sorts of provisions, beds, etc., with one, to erect a hut or cabin, and to bathe in the open air. Hence it arises that, with few exceptions, only the inhabitants in the vicinity of these baths make any use of them or have any experience of their medicinal virtues.

Ava or Kava Kava.

The root known under the name of Kava-Kava has lately attracted some attention in France as a remedy for gonorrhœa, and will probably be experimented upon here and elsewhere for this purpose. Although the plant which yields it (*Piper methysticum*, Miq.) has been known since the time of Captain Cook, yet a full description of the root and leaf for the purposes of pharmacognosy does not appear to have been given up to the present time. The *Pharm. Journ. and Trans.*, from which we abstract this paper, contains a handsome woodcut of the stem, leaves, and root, and these will be found to be of practical interest, as samples of this drug have reached England from France, which were merely matico leaves mixed with the fruit of the annatto plant.

The Kava-Kava plant is known by different names in different islands: thus, in Viti it is known as *Yaquona*, in Tahiti as *Ava-Ava*, in Hawaii as

Kava, and in the Marquesas Islands as *Kava*, or *Kava-Kava*.*

In New Zealand a species of pepper (*Piper excelsum*, Forst.) very similar in appearance to Piper methysticum, is known under the name of Kawa-Kawa. This plant, however, does not appear to possess the intoxicating properties generally ascribed to the root of P. methysticum, but is only used as a tea and for toothache.†

The Ava or Kava-Kava plant is cultivated in Viti, Tahiti, Hawaii, the Society and Tonga Islands. Several varieties of the plant are distinguished by the natives. Those which grow on dry soil are said to produce the most active roots.

The *Piper methysticum* is a shrub about six feet high, with stems varying from 1 to 1½ inch in thickness. The leaves vary from 4 to 8 inches in length, being nearly as broad as they are long. They are cordate, tapering somewhat suddenly into a very short acute apex. The petiole is usually 1 to 1½ inch long, and is dilated at its base. To the naked eye the leaves appear smooth, although under a lens the veins are seen to be covered with minute hairs, while the rest of the leaf has short hairs thinly scattered over it. The principal veins of the leaf, of which there are usually 10 or 12, radiate from the top of the petiole, the three central veins being very close together for about half an inch upwards from the base of the leaf.

The root is large and fibrous, but rather light and spongy in texture. When fresh it is said to weigh usually from two to four pounds, although it sometimes attains as much as twenty pounds in weight, or even more. In drying, however, it loses rather more than half its weight. Externally it is grayish-brown, with very thin bark, which, when sliced off, shows a complete network of woody tissue, some of the interstices of which are filled with soft yellowish-white cellular matter, while others are quite empty. Internally it is yellowish-white. In a variety of the plant known as "Marea," it is citron-yellow, and in another variety known as "Avini-Ute," it is pinkish. A transverse section shows a number of narrow lines (woody bundles) radiating from near the centre towards the circumference, the interstitial tissue being much wider than the lines themselves. The central portion of the root is soft and cellular, with a few woody bundles anastomosing with each other, and proceeding at right angles to the radiating bundles, so as to form a network in the centre of the transverse section. The root has a pleasant odor recalling that of the lilac (*Syringa vulgaris* L.), or meadow-sweet (*Spiræa Ulmaria* L.). It has a slightly pungent taste, and causes an increased flow of saliva, with a slightly astringent sensation in the mouth, and a scarcely perceptible bitterness. The root and extreme base of the stem are the parts generally used.

The form in which it has been used medicinally is an infusion made by macerating about 13 of the scraped root in a quart of water for five minutes. Unlike most other remedies for gonorrhœa, the taste of the infusion is pleasant, while its bitterness improves the appetite and does not produce nausea. The root contains, according to M. Cuzent, an essential oil of a pale yellow color, 2 per cent. of an acid resin, and about 1 per cent. of a neutral crystalline principle called Kavahin or Methysticin, which is obtained in acicular crystals from a concentrated tincture. Kavahin differs from piperine and cubebin in being colored red by hydrochloric acid, the red color fading on exposure to air into a bright yellow, and in being colored by strong sulphuric acid a purplish violet, which passes into green. The root contains also nearly half its weight of starch.

The action of Kava root appears to vary with the amount taken. In small doses it is generally stated to act as a stimulant and tonic, but when taken in large doses it produces an intoxication which differs from that caused by alcohol, in being of a silent and drowsy nature, accompanied by incoherent dreams, the drinker not being quarrelsome or excited.*

It appears probable that the medicinal properties of the plant are due neither to Kavahin nor to the resin, since a watery infusion produces the effects of the drug. The root is stated to have been used with success in erysipelatous eruptions, which is rather remarkable, since when taken in excess as an intoxicating beverage it produces a peculiar kind of skin disease, called in Tahiti "arevarea." In old drinkers the vision becomes obscure, and the skin, especially in parts where it is thick, becomes dry, scaly, cracked, and ulcerated. In Nukahivi the natives use Kava for phthisis and in bronchitis, a small dose being taken at bed-time. It has also been recommended to be used internally and locally for gout.

It was first recommended for gonorrhœa in 1857.†—*Pharm. Journ. and Trans.*, *Aug.* 16, 1876.

* *Pharm. Journ.* [2], vol. iv. p. 85.
† *Hooker, Flora of New Zealand*, i. 228.

* It is well known that the natives of many Pacific Islands are very fond of Ava-"Cider", the preparation of which is rather repulsive to European tastes. The roots, namely, are first washed, then carefully chewed by the young people, the "quids" thrown into a common trough, covered with water, and left to ferment, when it becomes drinkable in a short time.
† *Annal. de Thérap.*, 1857, 61.

PHARMACY.

New Uses of Vanadium.

JAMES GIBBON states (*Chem. News*) that paper drawn through a solution of a vanadium-salt and exposed to sun-light, furnishes a distinct image when treated with salts of uranium. The same result is obtained by using a mixture of vanadium- and silver-salts, and using ferrous sulphate as devel-

oper. Potassium vanadate in contact with organic substances, and under the influence of sun-light, turns first green, then blue. These, and other experiments, show that only the scarcity of this metal prevents its use for photographic purposes.

Since vanadium has lately come into use in dyeing, to produce aniline-black (see above, p. 144), it may be expected, that with an increased consumption of this element, its production will be increased, and the present high price become lower. Anticipating this result, it is proper to recall to mind that vanadium-salts are *poisonous*, and that caution is required in their preparation and employment. Priestley Platt, of Manchester, who experimented on animals, found that vanadium-salts produce local as well as general paralysis of the motor nerves, together with convulsions, decreased temperature, intermittent respiration, and feeble pulsation. The subject deserves further investigation. As antidotes may be recommended potassium ferrocyanide, which forms a precipitate with salts of vanadium in acid solutions. Tannic acid would likewise be indicated.—*Ind. Blätt.*, 13, 198.

Note on Acetate of Morphia.*

BY M. MERCK.

COMPLAINTS are sometimes made as to the solubility of this salt, it being generally expected that this substance should be easily and completely soluble in water. But acetate of morphia only answers to this condition when it contains sufficient acetic acid for its saturation, which is the case only when it is freshly prepared. The combination of morphia and acetic acid, as is known, is not very stable. There is a continual, although slow elimination of acetic acid from the preparation which leads to the formation of a basic salt, and eventually of pure morphia, so that the salt that was at first soluble becomes thus insoluble. The acetic acid that separates accumulates under the stopper of the vessel containing the salt, its presence becoming manifest by the odor when the bottle is opened. This fact causes the preparation to be sometimes looked upon as being acid, and as at the same time the salt is found to be not completely soluble in water, it is considered to be a proof of a mechanical adulteration, or an alteration arising from foreign alkaloids. This cause of incomplete solubility is not generally taken into consideration; but in the testing of acetate of morphia, the precaution ought to be taken of judging the amount of acid by noting the behavior of a solution to test-paper. Afterwards the eventual residue should be examined for pure morphia before the preparation is condemned as impure.

Several pharmacopœias, the German, for instance, allow an acetate of morphia that contains a small quantity of basic salt or pure alkaloid, since they permit the addition of a few drops of acetic acid to obtain a complete solution. Besides, as the separation of acetic acid cannot be avoided during a prolonged keeping, it is recommended to employ the preparation as fresh as possible, and not to lay in too large a stock. The unjust reclamations which sometimes originate in the formation of an extractive substance, and the tendency of the salt to become yellow, or even brown after a time, would be thus avoided.

As the cause of this decomposition is inherent to acetate of morphia, it cannot be prevented even by the complete exclusion of air and light, but in the most favorable conditions it would be a little retarded.

Among the reactions for recognizing the purity of morphia, the German Pharmacopœia mentions the colorless solution that this alkaloid should give with concentrated sulphuric acid, and also utilizes this test for the salts of morphia. With respect to the application of this test to pure morphia, the author merely remarks that a solution after being allowed to stand for some time, and especially if it has been heated, always has a faint violet-red color. But when the test is applied to the acetate, according to the author's experience, it may, in certain cases, give false results.

A perfectly pure acetate of morphia, which shortly after its preparation is without reproach, will at the end of a few weeks give a faintly colored solution, as has been proved by repeated experiments. The author concludes from this fact that the tendency of this salt to decompose is in close relation with the phenomenon of coloration. The color does not become visible to the eye until after a long time, but in reality it exists much earlier. This is the reason why a preparation which is not fresh, but appears to be still colorless, cannot stand the delicate test with sulphuric acid. The author has arrived at the conviction, based upon numerous experiments, that commercial acetate of morphia will not dissolve without coloration in sulphuric acid, especially of the strength prescribed (sp. gr. 1·840).

Experience has shown that acetate of morphia undergoes no loss of its medicinal properties through the decomposition referred to, unless an intense yellow color shows that the decomposition has proceeded too far. The author thinks that the test by means of sulphuric acid may be abandoned without disadvantage, and the more so as it may sometimes lead to the impression that narcotine is present.

Pharm. Journ. and Trans., Sept. 16, 1876, p. 229.

Contributions to Physiological Chemistry.

1. "*On Glycero-Phosphoric Acid and its Salts, as obtained from the Phosphorized Constituents of the Brain.*" By J. L. W. Thudichum and C. T. Kingzett.

Glycero-phosphoric acid was first prepared synthetically by Pelouze from glycerin and phosphoric acid, by heating these bodies together at a somewhat high temperature. Soon after Pelouze had constructed the acid synthetically, Gobley obtained it from egg lecithine ($C_{42}H_{84}NPO_9$) by

decomposing this substance with acids. Subsequently Lehmann observed its presence in diseased brain-matter, and for many years the source of it in the brain was considered, by inference rather than observation, to be the above named lecithin, while certain well defined principles contained in brain-matter, from which glycero-phosphoric acid is formed on chemolysis, were overlooked.

Quite recently, one of the authors of this paper has discovered the body named *kephalin* ($C_{42}H_{79}NPO_{13}$) in brain-matter, and has further already communicated some account of its decomposition products.*

When kephalin is boiled for many hours with baryta water, there are formed the insoluble barium salts of certain fatty acids, and a solution containing one or two nitrogenous bases, and barium glycero-phosphate. From this compound the acid and other salts may be prepared. Glycero-phosphate of barium is remarkable by the fact, that it is capable of forming an alcoholate, but it is unique in this respect, that it may be an alcoholate and a hydrate at the same time, the relative amounts of water and alcohol at the time of precipitation determining their proportion in the compound. We know now three classes of phosphorized bodies in the brain, which contain glycero-phosphoric acid as a proximate nucleus. These are the kephalins, myelins, and lecithins.

2. *On some Reactions of Biliverdin.* By J. L. W. Thudichum.

A quantity of biliverdin, which had been prepared from bilirubin by Heintz's process, and which on analysis yielded the formula $C_8H_9NO_2$, was dried, and a weighed portion thereof treated with dry bromine vapor until saturated; all excess of bromine and a quantity of hydrobromic acid vapor having then been removed, until the weight remained constant, the resulting product was found to be monobrominated biliverdin,

$$C_8H_9NO_2 + Br_2 = HBr + C_8H_8BrNO_2.$$

A weighed quantity, burned in vacuo with copper oxide yielded a mixture of carbonic acid and nitrogen, the carbon and nitrogen being in the proportion of 8.1 : 1.0, corresponding therefore practically to the above formula.

The percentage of bromine, and the ascertained volumic proportion of hydrogen to carbon further confirmed the figures obtained, so that it becomes highly probable that Dr. Thudichum's former statement that biliverdin ($C_8H_9NO_2$) differed from bilirubin ($C_8H_9NO_3$) by one atom of carbon is correct.†—*Journ. Chem. Soc.*, 1876, ii., 20.

Preservation of Syrups by Salicylic Acid.

M. Lajoux, a Paris pharmacist, has made some experiments with the object of ascertaining the minimum quantity of salicylic acid by which the fermentation of syrups can be prevented during the summer. The syrups experimented upon were red-currant, cherry, mulberry, maiden-hair, gentian, and compound ipecacuanha. It was found necessary to add a quantity of salicylic acid equal to one-thousandth part of the weight of the sugar in the syrup. Syrups thus prepared were kept simply covered with a sheet of paper at a mean temperature of about 17° C. At the end of two months they were still unspoiled, while the same syrups, under the same conditions, but without salicylic acid, were completely altered.—*Pharm. J. & Trans.*

Some new Compounds of Phenol with Cinchona-Alkaloids.

O. Hesse has investigated a series of new compounds of cinchona-alkaloids with phenol, which exhibit very curious properties, and some of which have already been found to be of practical value as criteria of cinchona- or phenol-assay, and medicinally. Among the latest of these compounds is *semiphenol cinchonidia*, obtained from a solution of equal equivalents of cinchonidia and phenol in dilute alcohol, as an oily layer, which gradually becomes crystalline. If strong alcohol be employed, the compound is at once obtained in handsome crystals, which have merely to be rinsed with dilute alcohol, to be entirely pure. The crystals are colorless, shining, odorless prisms, permanent in air, losing their phenol gradually at a moderate heat, and entirely at 130° C. Formula: $2C_{20}H_{24}N_2O, C_6H_6O$. This substance, although easily decomposable when free, is yet very stable as sulphate. Another compound: *sesquiphenol-cinchonidia*, was obtained by bringing together the alkaloid and phenol in the proportions of two to three. Cinchonidia has the property of combining with phenol in common with quinia; but the dextrogyre alkaloids: quinidia, cinchonia, and quinamia, appear to be unable to enter such a combination.—*Lieb. Annal. d. Chem.*, 182, 163.

Removal of Arsenic from Sulphuric Acid.

R. Wagner states that, according to his experience, the removal of arsenic from sulphuric acid may be readily effected by sodium sulphide, or better still, by barium hyposulphite, in which latter case the arsenic is precipitated as sulphide and the barium as sulphate.

The following equation shows the reaction:

$$3(BaS_2O_3,H_2O) + As_2O_3 = As_2S_3 + 3BaSO_4 + 3H_2O.$$

19.8 parts of arsenious acid require 85.5 parts of barium hyposulphite (BaS_2O_3,H_2O).—*Chem. Centralbl.*

Decomposition of Atropia.

F. Selmi has studied the decomposition of atropia in contact with putrefying animal substances. The products differ according as the decomposition takes place in acid or ammoniacal masses; and the decomposition by means of baryta differs from that effected by ammonia. It was found impossible to separate small quantities

* *Rep. Medical Off. Privy Council*, New Ser. No. iii.

† On page 288 of our last number will be found the formulæ of these substances, as commonly accepted, together with some remarks on their reaction.

of atropia, sufficient to give the characteristic reactions of the alkaloid, or to obtain crystalline compounds with iodated hydriodic acid, or with picric acid. But the alkaloid could still be recognized by the odor of hawthorn-blossoms emitted on evaporation in the air, which odor is not perceptible when oxygen is excluded. The intensely bitter extract was poisonous and caused dilation of the pupils.—*Ber. Deutsch. Ch. Ges. IX.*, 347.

Salicylic Acid as Indicator in Acidimetry.

ACCORDING to H. Weiske, a convenient quantity of salicylic acid is dissolved in distilled water, the solution filtered, and a few drops of solution of ferric chloride are added. To the intensely colored solution a very dilute soda-solution is carefully added, until the exact point of neutralization is reached, when the liquid assumes a reddish-yellow color. In titrating an acid, if a few cub. centim. of this solution be added, the liquid remains in the beginning colorless; but in proportion as the acid becomes gradually more and more neutralized by standard alkali-solution, the violet tint increases, until just before neutralization it assumes the greatest intensity, while all color suddenly disappears at the slightest excess of alkali. According to the author, this method permits a much more delicate titration than any other, principally because the transition from intense coloration to colorlessness is so rapid and decisive, without intermediate tints.—*Zeitsch. f. anal. Chem.*

Preparation of Ferrous Sulphide.

FERROUS sulphide, or sulphuret of iron, which is commonly used for preparing sulphuretted hydrogen, is usually prepared by melting together sulphur and metallic iron in a crucible, or by allowing sulphur to act upon *white*-hot pieces of iron. Although these materials are inexpensive, yet the product obtained by the before mentioned processes commands a higher price in the market than might be expected. In order to produce an equally good, but cheaper product, M. C. Méhu recommends to use a mixture of metallic iron and iron-pyrites or iron disulphide. Two parts of finely powdered pyrites and one part iron, powdered and free from oxide, are heated in a Hessian crucible for half an hour to redness, when a gray mass results, which may easily be powdered, and furnishes sulphuretted hydrogen in great abundance. It is not necessary for the mass in the crucible to melt, as the combination is formed already at a red heat; but the materials must be finely powdered and intimately mixed, and put into the crucible without pressing.—*Zeitsch. Oest. Apoth. Ver.*, 1876, 413.

Iodine and Borax.

A BOILING solution of 27 gm. (417 grs.) of borax in 250 c.c. (about 8½ fl. oz.) of water dissolves 7 gm. (108 grs.) of iodine. On concentrating the solution to 200 c.c. (about 6¾ fl. oz.), it becomes yellow, and deposits after a few days crystals of unaltered borax. The mother-liquid becomes darker by further evaporation, and finally opaque, with evolution of iodine-vapors. Hence a dilute solution of borax is capable of dissolving iodine, but in concentrated solution the iodates and iodides formed are again decomposed by the liberated boric acid. On adding boric acid to a boiling solution of potassium iodide, the latter becomes yellow, but does not evolve iodine. But if now an iodate be added, iodine is separated and the liquid turns brown. Hence boric acid sets free both hydriodic and iodic acid, which decompose each other to iodine and water.—*Journ. de Pharm. d'Anvers* in *Arch. d. Pharm.*

Urochloralic Acid.

ACCORDING to the investigations of Musculus and de Mermé, chloral hydrate is not decomposed in the organism, but a portion thereof is found unaltered in the urine, while another portion enters a peculiar combination in the circulation, and is in this form eliminated in the urine. The transformation resembles that of benzoic acid, which unites in the body with glycocol and is eliminated as hippuric acid.

After the administration of chloral, the urine has an acid reaction, reduces alkaline copper-solution, and turns the plane of polarization to the left, in direct proportion to the amount of chloral ingested.

The fresh urine is precipitated first with neutral, then with basic lead acetate, and the precipitates decomposed by sulphuretted hydrogen. The precipitate produced by basic lead acetate contains the new body, which is very soluble in ether-alcohol. Or urine may be concentrated and shaken with ether-alcohol, previously mixed with a little sulphuric or hydrochloric acid. The residue of this solution is found to be strongly laevogyre. In this manner the potassium-, sodium-, copper-, and other salts may be prepared.

The pure acid crystallizes in star-shaped crystals, much resembling those of tyrosin. They are very soluble, in water, alcohol, and ether-alcohol, but insoluble in ether.

They strongly redden litmus paper and decompose carbonates. Alkaline copper and bismuth solutions, as well as silver solutions, are reduced by it. The authors name it "urochloralic acid."—*Répert. de Pharm.*

On the Occurrence of Grape-sugar in Alcohol.

WHILE making some experiments on the assay of sugar in animal liquids and tissues, G. Salomon found that some residues from alcohol reduced alkaline copper solution. This impurity is not at all uncommon. It is found in alcohols of the best manufacturers, even in absolute alcohol. On evaporating it, a residue is obtained, which reacts with Trommer's test, and, when decolorized by lead acetate, turns the plane of polarization to the right. As much as 0.13 gm. in the litre (about 2 grs. in the quart) have been observed. The source

of sugar is probably the wooden cask in which the alcohol is transported; many of these casks having previously, no doubt, served for storing liquors. [This impurity is not very likely to happen in the case of American alcohol. Ed. N. R.] The knowledge of the possibility of the presence of sugar is of importance, since erroneous results may be arrived at in certain chemical analyses.—*Med. Centralbl.* 14, 388.

THERAPEUTICS.

On the Action of Alteratives.

The Practitioner of September has an article by its editor, T. Lauder Brunton, on "The Action of Alteratives," which contains suggestions upon physiological questions of great interest. According to a theory of the action of ferments, all the processes of nutrition may be carried on by them, and the same proximate principles which, in the intestines, serve to break up the albuminoids into forms which fit them for absorption and assimilation in the tissues, may, while circulating in the blood, lead to the changes in the tissues themselves which result in the liberation of urea, carbonic acid, etc. It is obvious, he thinks, that any alteration in the quantity or quality of the ferments in the intestine or blood will greatly influence nutrition, and he then proceeds to the question, as to "How do alteratives act?"

"First of all," he says, "we will consider the action of such alteratives as not improbably act upon the ferments in the intestine. I have already alluded to the similarity between the effects of nitrohydrochloric acid and sulphate of magnesia, either with or without a blue pill. Now sulphate of magnesia excites a copious secretion, washes out the intestine, and carries away some of the bile also. But it has probably much less effect upon the duodenum than mercury has, and thus does not greatly hinder bile, which has been thrown by the liver into that part of the intestinal canal, from being reabsorbed. Mercury, on the other hand, probably excites the duodenum to active peristaltic motions, the bile is hurried downwards and washed out without any time being allowed for reabsorption. Now, according to my supposition, the ferments contained in the duodenum will share the fate of the bile—they will be swept out of the body in the fæcal evacuations, and consequently the quantity in the blood will be diminished. The tissue change which they produce in the body will also be lessened, and thus we can see how purgatives, and especially mercurial and saline purgatives combined, may be useful at the commencement of a fever.

"We can also see how people may readily catch cold after the use of purgatives, and how these remedies are specially depressing to old people, whose heat-producing powers are already low, and who probably have difficulty in again forming new ferments to replace those they have lost.

"It is not easy to say precisely in what way nitrohydrochloric acid will affect the ferments in the duodenum and liver, but that it does do so, is, I think, shown both by its effects in frontal headache, without either dyspepsia or yellowness of the skin, or conjunctiva, and by its use in oxaluria.

"In an interesting paper published in vol. ii. of the St. Bartholomew Hospital Reports, Dr. Dyce Duckworth showed that the urine of patients, presenting no other symptoms than a tongue fissured longitudinally, and great depression of spirits, was generally found to present a white, hummocky cloud characteristic of oxalate of lime, and, on microscopic examination, to display numerous crystals of this substance. The oxalate of lime, in such cases, frequently alternates with a sediment of urates. Under the use of nitrohydrochloric acid the patients recover their spirits, and the oxalate of lime disappears. Now the alternation of lithates with oxalates is, I think, very suggestive, and points to the liver as the part affected. For it would appear that it is to a great extent in the liver that such albuminous matters as are to be used up at once, and are not to form permanent tissues, are broken up. Thus a meal of beefsteak alone will yield, in the liver of a dog, glycogen and nitrogenous bodies, which usually are converted into urea, but which, if imperfectly oxidized, will probably appear as urates. Now if the albumen is split up too quickly, as it would be by too much ferment in the liver, we would naturally expect the products of decomposition to be less thoroughly oxidized than they would otherwise be, and according as the one or the other took the available oxygen, so would be the waste product. If the glycogen got the oxygen, the nitrogenous products would be imperfectly oxidized, and lithates would appear; if the nitrogenous products got the oxygen, the glycogen would be more or less deprived of it, and thus, instead of undergoing complete combustion into carbonic acid and water, products of imperfect combustion, such as oxalic acid, would be formed. Lithates appear in the urine after a heavy dinner with wine, or some other cause of digestive disturbance, whereby we may suppose the decomposition of albuminous matter in the liver to be decreased, and they also appear after violent bodily exercise, which will increase the decomposition of albumen in the muscles.

"It would be a matter of much interest to observe whether nitrohydrochloric acid lessens the urates in the second case, though undoubtedly it would be a work of considerable difficulty. For my own part I am inclined to think that nitrohydrochloric acid acts chiefly in the intestine and liver, and slightly, if at all, in the tissues.

"There are other alteratives which have little or no action in the intestine, but have a powerful influence upon the tissues generally. They *may* have an action, and very often have one, upon the

changes which go on in the liver, but they do not all have it.

. . . . . .

"The use of potash is seen, *par excellence*, in gout, not merely as a remedy, but as a prophylactic. A very gouty old gentleman told me that by two methods he had succeeded in warding off an attack for a long time. The first of these was to drink a large quantity of water early in the morning. 'Too little water,' said he, 'is a great cause of gout; and whenever you get gouty patients in the upper classes, always ask them how much water they drink. You will generally find that they tell you: We take a small cup of tea in the morning and a small cup of coffee at night; and this is all the water they take, except what they get in the shape of wine and beer, or brandy and soda. Water, pure and simple, many of them never touch; in such persons gout may often be warded off by simply washing out their tissues. Give them a large draught of water the first thing in the morning and make them take more water and less wine at meals.

"'But if this is not enough, and the gout still threatens, give them 30 grains of bicarbonate of potash, and 20 grains of nitrate, in a large tumbler of water.'

"Now colchicum, as we all know, is useful in gout, and it used to be supposed that it was so by increasing the elimination of uric acid. But this is not the case, for Garrod and Parkes have shown that the elimination of uric acid is rather diminished by it. The explanation I would give of its action is that it affects the ferments by whose action the uric acid is formed, and thus by lessening its formation produces somewhat the same effect as increasing the elimination. Iodide of potassium has a special action on the lymphatic system, and it is in affections of this system that we see its beneficial effects most clearly. For the fascia and other fibrous structures are nothing but lymphatic pumps, pumping up the waste material from the muscles, and sending it on into the lymphatic trunks.

"It has been supposed that the action of iodides is owing to the chlorine already in the body having a stronger affinity for bases than iodine, and thus setting the iodine free. If this were the case we should expect that the effect of an iodide would be greater when much chlorine is present in the body; in this case the iodine would be more readily freed. The action of chloral is said by Liebreich to depend on the liberation of chloroform in the blood by the action of the alkalies contained in it, and when talking with him he told me that chloral was apt to lose its effect when given for a long time, unless the alkalinity of the blood was kept up by the administration of alkalies. It is possible that in the same way iodide of potassium may become less powerful if we neglect to keep up the chlorides in the body, and that its action may be increased by the administration of common salt. . . . .

"In a case of epilepsy, however, I once tried common salt with complete success, the fits being entirely stopped. In the next one it had no effect. Since thinking over the subject of alteratives, it occurred to me that possibly the success in the first case was due to the previous administration of a bromide, but unfortunately I have lost the notes of the case and cannot now ascertain if this were so or not.

"Mercury seems to have a special action on the albuminous tissues, as iodides in the lymphatics, and the breaking down of lymph by it in iritis seems more to resemble the digestion of fibrine by the pepsine or pancreatine than anything in inorganic chemistry. This special affection of mercury and iodides for different structures may give us a key to the proper employment of these drugs singly or in combination. Are the albuminous tissues to be acted on? Give mercury. Are the lymphatics to be set in action, either for the purpose of carrying away the albuminous *débris*, resulting from the effect of mercury, or for the absorption of enlarged glands, or removal of pain, hardening, etc., connected with tendinous or aponeurotic structures? Give iodine."

In concluding his paper, Dr. Brunton recapitulates the following points:

"All medicines may be called alteratives, but the name is specially applied to those which imperceptibly modify nutrition.

"Nutrition is carried on in the intestine, and probably in the body, by means of ferments.

"Alteratives probably modify nutrition by modifying the action of these ferments.

"Nitro-hydrochloric acid probably acts in headache, and also in the depression of spirits associated with oxaluria, by modifying the action of ferments in the intestine or liver.

"Lithates are probably formed in the liver, and also in the muscles. The question arises: Is nitrohydrochloric acid useful in stopping the lithates from disorder of the liver and digestion only; or is it also useful when the lithates arise from other causes?

"Colchicum is probably useful in gout by diminishing the production of uric acid.

"Iodide of potassium acts on the lymphatics.

"Mercury acts on the albuminous solids.

"Is the action of iodides increased by giving salt?"

Treatment of Pruritus by the Smoke of Juniper Needles.

Dr. Boeck, of Christiania, reports the results of this remedy in several cutaneous affections, in which itching forms a most distressing symptom, especially urticaria, pruritus, and prurigo. The patient is inclosed as for an ordinary mineral vapor bath, and beneath him, with proper precautions against the blaze which may ensue, is placed a pan of live coals, upon which the juniper leaves have been thrown. If not freshly picked, the needles should be damped with water. The patient is to remain exposed to the vapor for twenty or thirty minutes, generally on every second day. In prurigo, the remedy is immediately

effective, and many cases have, after treatment in hospital by this means, been discharged cured. The most marked effects were obtained in bad cases of chronic urticaria and pruritus.

Carbon Bisulphide as a Local Application to Strumous and Syphilitic Ulcers.

M. GUILLAUMET, who has experimented extensively upon the local employment of carbon bisulphide, says, in reply to objections that have been made to its supposed poisonous character, and on account of its smell, that as regards the first, it may be freely inspired without harm, and for the second, that it may be deodorized by peppermint essence and tincture of iodine; the latter augmenting its beneficial effects. He mentions cases in which it has been of value when used in lupus of the face, and in strumous and syphilitic ulcerations of the female generative organs.—*Jour. de Thérap.*

The Local Action of Astringents on the Vessels.

ROSENSTEIN has recently made a series of experiments to determine the relative degree of action of the various substances rated as astringents, using the vessels of the mesentary of the frog; exact micrometric observations being made before and after the applications of the substances in rather weak solution. Providing that the actions of the agents is the same upon warm as upon cold-blooded animals—which is by no means certain—nitrate of silver and the acetate of lead are the most efficient of the astringents, the former being the most powerful of the two, requiring only a 1–10 per cent. solution, whilst the lead required 50 per cent., its action being more permanent, without occasioning coagulation. Tannic acid may be struck off the list of astringents, since it invariably caused dilatation of the vessels, as do also gallic and pyrogallic acids. Liquor ferri perchloridi acts only feebly on the vessels, even when applied in solution strong enough (50 per cent.) to coagulate the blood; in weaker doses it has no action. In regard to alum it, in the greater number of cases, causes dilatation of the capillaries, and subsequently causes complete and persistent stoppage of the circulation. Clinical observation accords with these facts, for in angina tonsillaris repeated painting of the surface with concentrated solution of tannic acid was of no use whatever, whilst a four per cent. solution of nitrate of silver speedily brought the dis easeto an end.—*The Practitioner* from *Verhandlung. der Phys. Med. Ges. in Würzburg.*

Administration of Carbolic Acid to Diabetic Subjects before Surgical Operations.

DR. H. FISHER, of Breslau, in view of the unfavorable results which attend operations upon diabetic subjects, has lately resorted to the use of carbolic acid internally for the reduction of the amount of sugar, as suggested by Ebstein and Müller, and says that if this agent be administered internally in small and frequently repeated doses, it will, in a short time, cause a considerable reduction in the amount of sugar in the urine, and permit the surgeon to perform his operation with the ordinary chances of success. The use of carbolic acid should be kept up during the after-treatment, and not be discontinued until the wound, formed in the operation, be quite closed. In cases of severe and extensive inflammation following an important operation in the subject of overlooked diabetes, the author has frequently succeeded in arresting the local mischief by reducing the amount of sugar in the urine through the administration of carbolic acid. He has also observed good results from an energetic administration of carbolic acid in cases of the so-called diabetic carbuncle.—*London Med. Record*, from the *Deutsche Med. Wochenschrift.*

The Toxic Properties of Glycerine.

MM. DUJARDIN-BEAUMETZ and Audigé have made a series of interesting and elaborate experiments upon the poisonous effects produced upon dogs by large doses of glycerine, which were injected under the skin, the conclusions arrived at being as follows: 1. Glycerine, chemically pure, causes in the dog, in twenty-four hours after being introduced under the skin, deadly effects when the dose is in the proportion of 8 to 10 grammes to a kilogramme of the weight of the dog. 2. The toxic effects (acute glycerism) are comparable within certain limits to those of acute alcoholism. 3. The microscopic lesions in glycerism are analogous to those of alcoholism, which tends to induce the belief that the toxic effects of these substances are almost the same. 4. From a therapeutic point of view, there may, therefore, be some danger in introducing glycerine into the economy in too large quantities.—*Bull. Gén. de Thérap.*

Treatment of Pertussis.

IN a paper read by Dr. P. Brynberg Porter before the New York Medical Journal Association, and published in the *New York Medical Journal* of October, the author detailed the results of using chloral, quinia, castanea, and inhalations of ether in the treatment of pertussis. His conclusions are, in the main, like those arrived at by him in a former paper (1873), and may be summarized as follows: It is his opinion that in the average number of cases where either of the three remedies first mentioned seems to be of advantage and is given early, the paroxysmal stage is about three weeks in duration. He has found castanea to fail in a larger proportion of cases than either chloral or quinine. He thinks that with one or the other, or perhaps two of these remedies together, we ought not to find pertussis to be such a "formidable adversary" as it has hitherto been generally considered.

Existence of Phenol-forming Substance in Urine.

STÄDELER ascertained that phenol forms a natural and constant constituent of healthy urine. But this statement was afterwards modified by

Buliginski,* who proved almost conclusively, that phenol, as such, did not preëxist in the urine, but was produced by the action of dilute mineral acids upon a yet unknown body soluble in alcohol, and not precipitable by neutral or basic lead acetate, or ammonia.

J. Munk now finds that herbivorous animals excrete in the urine a comparatively larger quantity of this substance, which on distillation with dilute mineral acids forms phenol. He also observed that in man, and in carnivorous animals, a vegetable diet increases the excretion of this phenol-forming substance.

Schultzen and Naunyn having stated that benzene, when administered, is excreted as phenol, this statement appeared to Munk to be extraordinary, seeing that benzene had never been directly oxidized into phenol outside the living body.

He found that when he himself took benzene, neither this body nor phenol could be detected in the urine, but that the phenol-forming substance was thereby increased in proportion to the quantity of benzene ingested. The same was not found to be the case with toluene, this substance appearing in the urine as hippuric acid.—*Pflüger's Arch. f. Phys.*, 12, 142.

RECENT PAPERS.

Liebig's Annalen der Chemie. No. 182, 1 and 2.

OUDEMANS: "Specific Rotary Power of the Principal Cinchona-Alkaloids." [The author endeavored to ascertain whether the quantitative determination of one or more cinchona-alkaloids, present in one solution, could be accomplished by means of the polaristrobometer. It being, however, known that these alkaloids exhibit very different rotary powers under the influence of different solvents or in different degrees of concentration, a series of experiments were undertaken to determine once for all their precise rotation under exactly known and previously determined conditions, while at the same time all possible errors were as much as practicable eliminated. Without going into details, we may quote here a few general results of his observations: 1. The maximum of the specific rotary power in presence of most inorganic acids is reached only when a little more acid is present than is necessary to form a mono-salt. 2. In presence of some organic acids, a large excess of these is necessary to reach the maximum. The quantitative determination of quinia in the cinchona-bark, or of several cinchona-alkaloids present at the same time, by means of polarization, was found very practicable. For method and formulæ we must refer to the original paper.]

O. HESSE: "Studies on the Rotary Power of the Principal Cinchona-Alkaloids." [Hesse gives the figures expressing the right or left angular deviations for the various alkaloids, when dissolved in 97 per cent. alcohol, in sulphuric, or in hydrochloric acid. In a foot-note he remarks that, according to Oudemans' statements, quinia hydrate is difficult to dehydrate at 100° C., while he himself did not encounter any difficulties in this respect. Oudemans uses a water-bath in drying his quinia hydrate. Hesse, however, uses an air-bath heated by a naked flame; but even this does not account for the difficulty; any failure must be ascribed to haste. On heating the quinia hydrate rapidly to 100° C., before the greater quantity of water has had time to vaporize, the substance melts and prevents the escape of the enclosed particles of water. In this case it is impossible to produce dehydration at 100° C. According to some determinations there is three per cent. of water retained. Hesse dries his quinia first slowly in the desiccator, where it loses about 10 per cent. of water during a few hours. After twenty-four hours the loss amounts to about 13.5 per cent., when the substance may at once be heated to 100° C. without melting. In reference to the adaptability of the polarizing power to the quantitive determination of one or more alkaloids in their natural condition, Hesse finds the process impracticable, chiefly on account of the basic nature of the coloring matter which accompanies them, and which can only be got rid off at a sacrifice of some alkaloids. He, however, proposes to use it as a highly delicate test for the identity and purity of the alkaloids, which show a definite deviation under exactly known circumstances. Given a specimen of quinia sulphate, ascertain its percentage of water of crystallization, and supposing it to contain 15 per cent. of water of crystallization, weigh of the original salt $\frac{100}{100-15}=\frac{100}{85}=1.765$ gm. Add to this 4 mol. of hydrochloric acid, dilute the solution with water until it measures 50 c.c., and observe it in a tube of 200 mm. length; the deviation will be found to be 9.42° to 9.54° to the left, corresponding to about − 235.5°, as obtained by Hesse's formula.]

O. HESSE: "On the Behavior of Phenol towards some Cinchona-Alkaloids." [See page 297. In the course of the paper the author has occasion to remark that while *aqueous* solution of phenol is well known to strike a violet-blue color with ferric chloride, the presence of alcohol materially interferes with, prevents, or destroys this reaction. The same is the case with morphia hydrochlorate.]

G. SCHACHERL: "On the Action of Hydrochloric Acid upon Potassium Chlorate." [The fixed residue is potassium chloride; the gaseous products are chlorine and hypochlorous acid. The largest yield of the latter results from one mol. potassium chlorate and five mol. sodium chloride, to which is added, slowly under very gentle heating, sulphuric acid diluted with its double bulk of water.]

DR. W. F. LOEBISCH: "Chemical Examination of a Case of Cystinuria." [The urine of the patient, a young American physician, from Rhode Island, studying at Vienna, could only be observed during a fortnight; it was examined daily, and the amount of cystin was found to vary from 0.2499 to 0.5880 gm. The cystin was determined by adding to 500 c.c. of urine 20 c.c. of 20 per cent. acetic acid, allowing to deposit, transferring to a filter, washing with dilute acetic acid —and also with hot water, if sodium urate was present— after which the filter was dried and weighed. It was again placed into a funnel, the filter treated with a few drops of dilute hydrochloric acid, again dried and weighed. The difference was calculated as cystin.]

Pharmaceutic Journal and Transactions. Nos. 320–325.

JOHN R. JACKSON: "Notes on the Drugs collected by the Prince of Wales in India." [*Illicium religiosum*, a species only little differing from *anisatum*, is held sacred by the Japanese, who burn the bark as incense in their religious rites. It is said to burn slowly and evenly, and on this account is powdered and put into tubes, graduated on the outside, which, being burnt during the night, mark the time. The young bitter wood of *Coscinium fenestratum*, or tree-turmeric, is used as an efficient substitute for colombo.—The bark of the root of *Toddalia esculenta* is a stimulating tonic; this drug was once in use in Europe, as a remedy in diarrhœa under the name of *Lopez root*.—The aromatic seeds of *Cassia Absus*, or Black Grain, are used, as fine powder, in ophthalmic cases.—The seeds and the bark of *Cassia auriculata* are likewise used medicinally, the latter principally as an astringent.—The seeds of *Vernonia anthelmintica*, are used as an efficient vermifuge.—The roots of *Picrorrhiza Kurroa* are very bitter and are used as a tonic.—*Bambusa arundinacea*, a graminea, is reputed to have many medicinal virtues; but the greatest value is placed upon a peculiar siliceous concretion, called *Tabasheer*, found in the hollow stems near the joints or articulations of the bamboo; it is considered by the natives a certain cure for paralysis, flatulence, etc., but is in reality probably altogether inert.*]

* *Hoppe-Seyler, Med. Chem. Mittheil*, 2, 234.

* Tabasheer, or Tabâshîr was a favorite remedy of the Arabic physicians, and forms an ingredient in many of their standard prescriptions.

JOHN R. JACKSON: "Ava or Kava-Kava." (See page 294.)

EDITORIAL: "Acclimatization of Plants." [The Liberian Coffee, which produces a very large seed, has been successfully introduced into most other coffee-growing districts — Para Caoutchouc (*Hevea Brasiliensis*), the most valuable rubber-tree, has been acclimatized in India. Cuttings of *Castilloa elastica*, the source of another valuable American rubber, have also been nursed at Kew, and the young plants will shortly be despatched to India.]

THOS. GREENISH: "Arrow-root." [The author begins his paper with an excursion on the etymology of this word. Martius had stated that the Aruac or Aroaquis Indians of South America call the finest sort of fecula, which they obtain from the Mandioc, "*Aru-Aru.*" The authors of the "Pharmacographia," however, dispute this. But others maintain that "*ara-ruta*," meaning "mealy root," is the word from which arrow-root is derived. Mr. Greenish learnt from some old Brazilian residents, that the term "ara-ruta" is well known in Brazil, and that it originated with the native Indians, hence is not derived from our "arrow-root." —The evidences against the probability of this derivation are, however, convincing. "Ara-ruta" is certainly nothing but a corruption of our "arrow-root." Ed. N. R.]

W. DYMOCK: "Notes on Indian Drugs." [*Ferula* sp.; the seed; local name Dookoo; the volatile oil, resembling the odor of orange leaf, is used as a carminative.—*Lobelia nicotianæfolia;* native name, Bokenul; an anti-spasmodic. —The root of *Pavetta Indica*, native name Paptee che Mul, is bitter and is used as an aperient.—*Trichosanthes Palmata*, native name Koundal; is used in asthma.—*Sizygium Jambolanum*, local Jambool; the bark and fruit are excellent astringents.—*Psidium Pomiferum*, local Peroo; the bark, called also Guava bark, is astringent and agreeably acid, owing the latter property to a crystalline deposit, probably an acid lime- or potash-salt, found in the vascular system.—*Boswellia serrata;* the gum resin, local name Gugal, is used. This is often, but erroneously, mistaken for olibanum.

POISON-CASE: A case of poisoning by paraffin oil occurred lately in England. The captain of a large iron vessel, stranded on Harlech beach, while superintending the attempts to float the vessel, went into the cabin to get a drink, and incautiously seized a jar, supposing it to contain water. He hastily drank a quantity of the contents, which proved to be paraffin oil. He became insensible and died within a few hours.

A. J. COWNLEY: "The Water of Crystallization in Quinine Sulphate." [Jobst and Hesse, as quoted by Watts, state that at 110°–120° C. this salt loses its water of crystallization, and other authorities having stated that when dried at 100° C. the salt still contained 2 mol. of water, the author instituted a series of experiments, which show that quinia sulphate, dried at 100° C., becomes really anhydrous; the anhydrous salt, when exposed freely to air, absorbs about 2 mol. of water, and hydrated sulphate exposed at the same temperature to air loses some of its water, until it retains about 2 molecules.]

G. MERCK: "Note on Acetate of Morphia." (See p. 296.)

BRITISH PHARMACEUTICAL CONFERENCE: *B. S. Proctor:* "Note on Liquid Extract of Pareira." [The examination of three commercial samples of this preparation was effected by preparing some standard liquid extracts of proper strength, and adding a measured quantity thereof to a given bulk of water until the *taste* corresponded to that of the other samples; a mixture of water and liquid extract, containing only 16.6 per cent. of the latter, was found to correspond to one sample; with 29.4 per cent., to the second sample, and with 42.8 per cent. to the last.]—*W. W. Stoddart:* "Notes on the Coloring Matter of Crocus Sativus." [The author has ascertained an exceedingly delicate test for the coloring matter of saffron: Put into a test-tube a *very dilute* infusion of supposed saffron (or a suspected yellow color). If no sugar is present, add a crystal, and as much dilute hydrochloric acid as will completely decolorize it. Bring the whole to the boil, and if the color is due to saffron, the yellow tint will be restored in a few seconds, and a beautiful bright red fluorescence make its appearance on the surface of the liquid. An infusion containing only $\frac{1}{233}$rd part of its weight of the stigmata of saffron showed this characteristic reaction in a most decided manner.]—*D. B. Dott:* "The Variation in Strength of the Opium Preparations." [Eighteen samples of tinct. opii, Br. ph. yielded quantities of morphia varying from 0.55 grs. to 4.37 grs. in the fluid ounce.]—*Ed. L. Cleaver:* "Report on the Assay of Opium for Morphia." [The author of this elaborate paper, having stated his objections to several features connected with existing processes, proposes to modify them as follows: 1. The opium should first be treated with carbon disulphide or benzine. 2. The dried residue should then be mixed with its own weight of lime and two or three times its bulk of some inert powder, such as pumice or glass. It is then to be percolated with water, the first part of the percolate to be returned as fast as it runs through. By this means much less water will be required to exhaust the opium than would otherwise be the case. After the opium is exhausted, which will be known by the liquid dropping through devoid of taste, the solution should be exactly neutralized with dilute sulphuric acid, filtered, and the precipitate washed. The clear solution is then to be evaporated over a water-bath until its bulk is about half an ounce (for every 100 grs. of opium), and again filtered, if requisite; then ammonia is to be added in slight excess, and the liquid allowed to stand twenty-four hours. The precipitate can then be collected, washed with ether and dried, and to the amount found must be added the amount retained by the water used in washing and by the mother liquid: the correction being: 0.001 gm. of morphia to be added for every c.c. of liquid.]

Journal of the Chemical Society.

July, August. THOS. CARNELLY: "On the Action of Water and of Various Saline Solutions on Copper." [Distilled water in contact with copper takes up notable quantities of it, increasing with length of contact, 100 c.c. having dissolved 0.28 milligrammes in seventy-two hours. In the case of salts, 5 gm. of a salt were dissolved in 100 c.c. of water, and the solution brought in contact with copper for forty-eight hours; solution of sodium carbonate dissolved 2.8 mgm., sodium chloride 7.5 mgm., ammonium sulphate 28.5 mgm., ammonium nitrate 60 mgm., and ammonium chloride 158.75 mgm. The latter salt, either alone or in conjunction with others, was found to be most energetic.]

J. L. W. THUDICHUM AND C. T. KINGZTET: "Communications from the Pathological Laboratory, etc." (See p. 296).

J. W. THOMAS: "On the Gases enclosed in Cannel Coals and Jets." [The gases were found to be marsh gas, carbonic anhydride, hydride of ethyl, and nitrogen in coal, and carbonic anhydride, quartane or ethyl, and nitrogen in jet.]

Pharmaceutische Centralha'le. Nos. 30–35.

A. GAWALOVSKI: "Artificial Ivory." [For some time past the market is supplied with a substitute for ivory which, owing to its cheapness, bids fair to curtail the use and sale of genuine ivory goods in many respects. But this peculiar compound has two great disadvantages. One is that by handling it with warm moist hands, or when attempting to clean it with water, it becomes soft, swells up, and gets sticky. But the other drawback is more serious. Its composition being: water, 80.80; *lead peroxide*, 16.04; barium sulphate, 26.05; glutin, 34.21; and various other less important substances,—*the employment of this compound in the manufacture of toys for children, mouth-pieces, eating utensils, etc., is highly dangerous.*]

H. HAGER: "Cresotic Acid and Sodium Cresotate." (See p. 294.)

Répertoire de Pharmacie. Nos. 15, 16.

J. CLOUET: In reference to Clouet and Bergeron's statement about the innocuousness of *pure* fuchsine (see above, p. 238), and the emphatic contradiction of this statement by Mr. Bastide (see above, p. 277), the author reasserts his former views, and promises proofs. We do not deny that he may be right, as far as *pure* fuchsine free from arsenic is concerned, but as long as arsenical aniline colors are in the

market, the employment of any such coloring matter is exceedingly dangerous.

P. JAILLARD: "New Adulteration of Quinia Sulphate." [Reports that a mixture containing 70 per cent. of potassium nitrate and 30 per cent. of quinia sulphate has made its appearance upon the French market. The labels and wrappers bear the reputable name of Armet de Lisle & Co., being most probably counterfeit.]

Edinburgh Medical Journal.

July. CHARLES BELL: "The Treatment of Erysipelas by Muriated Tincture of Iron." [Prof. Spence, of the University of Edinburgh, having publicly taught that 15 to 20 minims of tincture of the perchloride of iron given four or five times a day *may* be beneficial in cases of erysipelas, and having expressed doubts of the efficacy of large and frequently repeated doses of muriated tincture of iron in that affection, Dr. Bell comes to the defence of a mode of treatment which has been so well proved, that we are surprised that a man so eminent as Prof. Spence should have doubted its efficacy.]

JOHN BALFOUR: "Antiseptic for Country Practice." [Sulphurons acid, with water—1 part to 12—applied by means of a very thin cloth, which is to be kept constantly over the injured surface, and moistened with the dilute acid, is recommended for its antiseptic properties, and several surgical cases of all degrees of severity are cited in proof of its efficacy.]

The Chicago Medical Journal and Examiner.

October. DANIEL T. NELSON: "Salicylic Acid." [Detailed notes of its effects in cases of intermittent fever, anæmia with neuralgia, acute rheumatism with syphilis, acute rheumatism, and a series of experiments upon healthy persons.]

EDMUND ANDREWS: "Itinerant Pile Surgeons and their Secret." [A number of men have been travelling in Illinois, and the adjoining country, claiming to cure piles without an operation, by a new method, which Professor Andrews has found to consist of injections, by means of a hypodermic syringe, of a solution of crystallized carbolic acid, ʒ iij., in some bland fixed oil, f. ʒ i. Some use equal parts of the two ingredients, and others employ glycerine instead of the oil, and in many, if not most cases, the method seems to work admirably, barring the risk of embolism.]

Buchner's Neues Repertorium f. Pharmacie.

August. DR. BUCHHEIM: "On the Active Principle of Ergot." [Believes that the active principle of ergot cannot be separated in a form useful for therapeutic purposes. The best preparation will always remain the fresh substance itself, or a carefully prepared liquid or solid extract.]

The Analyst. Nos. 1–6.

T. REDWOOD: "On the Determination of the Melting Points of Butter and other Fats." [Into a basin, about 6 inches wide and 3½ inches deep, a beaker (4½" deep and 3" wide) is placed, and within this another much smaller beaker, supported by its projecting rim on a disk of tin-plate or copper, the outer edge of which rests on the mouth of the larger beaker. Some mercury is put into the smaller beaker to the depth of about an inch, and cold water into the larger beaker, so that its surface shall be about ½–1" higher than that of the mercury. A small drop of the fat to be examined, melted upon the end of a glass rod, is placed upon the surface of the mercury, and allowed to become solid. Then hot water* is poured into the basin, and a finely graduated thermometer is depressed into the mercury. The heat communicates itself to the water in the beaker, and through it to the mercury; and the melting point of the fat may be determined with the utmost accuracy.]

ALF. HILL: "What is Milk of Sulphur?" [This is the standing bore at present in prosecutions under the Adulteration Act. Much difference of opinion exists among chemists, whether "lac sulphuris" and "precipitated sulphur" are identical or not. We agree fully with Mr. Hill, and with all those who take words at their proper sensible meaning: "precipitated sulphur" is *pure* sulphur, thrown down from the solution of a sulphide, by an acid forming a soluble salt with the other element; and "milk of sulphur" is precipitated sulphur *mixed* with coprecipitated calcium sulphate.]

* Hot glycerine or oil would be better, as no vapors are given off.—ED. N. R.

American Journal of Pharmacy.

September. O. L. CHURCHILL: "Analysis of 6 Nostrums sold as Ague Cures." [1. "Ayer's Ague Cure": each bottle contains fl. ʒ 6 of a syrupy tincture of cinchona, aromatized; 1 fl. oz. contains 3.2 grs. of amorphous alkaloids, 3 grs. cinchonia, 0.7 cinchonidia, 0.8 quinia, and 1 gr. quinidia. 2. "Wilhoft's Antiperiodic Fever and Ague Cure": each fl. oz. contains 3 grs. of quinia, and 5.4 grs. of sulphuric acid, 1.5 of which is free. 3. "Christie's Ague Mixture": a tincture of cinchona bark, with cinchonia sulphate and molasses. 4. "Petermann's Michigan Ague Cure": an alcoholic syrupy tincture of cinchona with chinoidin. 5. "Jayne's Ague Mixture": contains not enough quinia or other cinchona alkaloids to make the liquid very bitter. 6. "Rhodes' Fever and Ague Cure, or Antidote to Malaria": each bottle holds 12 fl. oz.; on standing, a sediment is deposited which fills one-third of the bottle. This is charcoal; the solution contains sugar and a little tincture of chloride of iron, also a trace of sulphuric acid—nothing more.]

W. A. TAYLOR: "Extractum Gossypii Rad. Fl." [The gelatinous constituents of the root-bark are dissolved by strong and by dilute alcohol, but are held in solution by the former; the greater the proportion of water, the sooner the extract gelatinizes.]

Archiv der Pharmacie.

August. E. REICHARDT: "Pararabin, a new Carbohydrate." [The cellular tissue of beets, and probably of all plants, when treated with very dilute soda solution, yields a peculiar acid, identical with that obtainable from gum arabic, and hence called arabic acid. After this has been removed, if the residuary tissue be treated with dilute (1%) hydrochloric acid, boiled for several hours, and the filtered liquid be mixed with alcohol, a new substance is obtained, which on analysis is found to have the same constitution as arabic acid, namely, $C_{12}H_{22}O_{11}$, but differs from it in other respects. This substance is called *pararabin*.]

B. HIRSCH: "On the Hydrometer in Common Use." [Discussing the merits and faults of the various hydrometers in use, and recommending, as affording the greatest degree of precision, a modified form of Wittstock's hydrometer, consisting of 3 spindles provided with cup, a set of weights, thermometer, and floating cylinder. Price 42 and 50 marks (from 10 to 12 dollars).]

Zeitsch. des Oest. Apoth. Vereins. Nos. 22–26.

G. C. WITTSTEIN: "On Maczusky's Nut-Extract." [This nostrum, which is sold in Vienna for 6 marks per bottle, and claims to be an infallible remedy for dyeing hair blond, brown, or black, and to be an innocuous extract of nut-shells, was found on analysis to contain in 70 gm. of liquid: 1 gm. pyrogallic acid, 0.237 ferric chloride, 0.394 cupric chloride, 0.604 hydrochloric acid.]

A CASE of Echinoccocus hepatis (hydatids in liver), with fatal termination, is related. The transmission of the parasitic infection was caused by frequently caressing a pet dog affected by it.

M. C. MÉHU: "Preparation of Ferrous Sulphide." (See p. 298).

Chemist and Druggist.

September. REPORTS OF PAPERS READ AT BRITISH PHARMACEUTICAL CONFERENCE.

DAV. BROWN: "On the Presence of Free Acetic Acid in Opium." [The author has found a very small quantity of free acetic acid in all varieties of opium. This acid must therefore, he thinks, be considered to be one of the normal constituents of the drug.]

G. WELBORN: "A new Excipient for Pills." [The unsatisfactory condition which several of the pill-masses of the Pharmacopœia acquire by long keeping may, in a great

measure, be prevented by substituting the following mixture for some of the official excipients:

Gum tragacanth, in powder ..... ½ oz.
Glycerine and water, of each.....2½ ozs.
Oil of pimento.....5 drops.
Mix.

℥ j. of sulphate of quinine and ℈j. of the tragacanth excipient make a nice mass, while only gr. vij. of it suffice to form a tough plastic mass with ℥ j. of compound ipecacuanha powder. The properties of the tragacanth excipient may be summarized as follows: The relatively small quantity necessary to effect the desired purpose, the facility with which it mixes with dry powders, its cleanliness, and its efficacy as a preservative.]

THOS. HAFFENDEN: "On Phosphorus Pills." [The author's formula contains mucilage, powdered sugar, tragacanth, phosphorus, and quinia or reduced iron, as may be ordered. But, as one member remarked, there was an apparent defect in the formula, inasmuch as the phosphorus was present in the mass in the form of a doubtful comminution, instead of solution. Prof. Redwood remarked that the officinal pill-mass, consisting of phosphorus dissolved in balsam of tolu, kept well and found great favor. It should be prescribed in the proportion of three grains of the mass to one grain of Castile soap.]

A. W. GERRARD: "On some Salts of Pilocarpine." (See November No.)

W. A. TILDEN: "On the Therapeutic Value of the Aloins." [Messrs. Tilden and Dobson state that there is very little, if any, difference between the medicinal values of aloin, obtained from the various sorts of aloes.]

THOS. GREENISH: "Filtering Papers." (See November No.)

L. SIEBOLD: "The Strength of Tr. Nucis Vom." [The author obtained from 1,000 c.c. of each of 10 samples of this tincture the following quantities of extract: 2.7, 2.9, 4.0, 4.3, 5.5, 8.9, 9.0, 9.6, 9.6, 10.1 grammes. He considers absolute uniformity to be obtainable only by preparing it from a definite quantity of the extract. Prof. Redwood adds the remark, that the weakness of the preparations examined might have been due to an adulterated condition of the powdered nux vomica used.]

CORRESPONDENCE.

The Homœopathic Question.

TO THE EDITOR OF "NEW REMEDIES."

DEAR SIR:—Your correspondent, Dr. Carter, is incorrect in his criticism of your statement "that homœopathic physicians differ among themselves as to the degree of attenuation of medicines," and states that from considerable reading of their works, etc., he has yet to see one syllable justifying the view that "they have abandoned as essential, or rather, consider as subordinate, one of Hahnemann's fundamental tenets—infinitesimal doses."

The following quotations from a recent work* will perhaps satisfy Dr. C. that many homœopaths have of late years modified somewhat their views as to the size of doses:

"I would kindly urge upon our brethren the fact, a full substantiation of which will be presented in these pages, that symptoms, infinitesimal doses, hypothetical potencies, and microscopic globules, do not constitute the Alpha and Omega of homœopathic wisdom," p. 14.

"One of the most characteristic distinctions which separate the literal followers of Hahnemann from the progressive cultivators of the science of homœopathy is the theory concerning doses. The former generally hold to the doctrine that anything more material than an infinitesimal dose of medicine is a violation of the rules of what they are pleased to term 'pure homœopathy.' The latter, among whom are to be found the most enlightened and liberal-minded homœopaths in this country, as well as in Europe, hold that any dose, large or small, is legitimate and scientifically correct, which will effect a cure in the most thorough, safe, and expeditious manner," p. 15.

The author, after stating his belief "that the attenuations, from the sixth to the thirtieth, will often produce the most startling and brilliant curative effects," adds: "On the other hand, I can affirm with equal positiveness, that, in hundreds of cases, I have derived more benefit from the employment of material doses than from the exhibition of the same remedy in the attenuated form," p. 16.

"If, upon good grounds, we are led to decide in favor of the tincture, we act wisely in preferring it to the attenuations," p. 17.

"I have cured numbers of cases of diarrhœa, during the great cholera epidemic of 1848, by means of the first decimal trituration of arsenious acid. I have often given two grains of this preparation at one dose, without ever witnessing a single untoward result from such medication," p. 17. Surely the fifth of a grain of arsenic is a pretty large dose.

"It would be absurd to maintain that an infinitesimal dose constitutes the essence of homœopathy. The size of the dose has no necessary connection with the idea of homœopathy." "More than one case of desquamative inflammation of the kidneys has yielded to teaspoonful doses of cochineal, which could not have been reached by the attenuations," p. 139.

Numerous passages in Hempel's book go to show that he and many other homœopathic physicians regard the question of *size of dose* not as a matter of *dogma*, but as one of *experience*.

From "The Skin and its Diseases," by J. Rutherford Russell, M.D. London.

"In the therapeutic part of this paper we have left the question of the dose entirely in abeyance; those in the habit of using high dilutions prefer them in diseases of the skin as well as in other morbid affections; those who usually give low dilutions, in their turn prefer the low. As yet there is neither a sufficient accumulation of accurate observations to enable us to decide upon the ground of empirical statistics, nor has there been any successful attempt to ascertain the laws by which the enormous differences in the amount given by different practitioners, with nearly the same success, are to be accounted for. Till one or other of these grounds of comparative certainty be attained, all dogmatism on this subject would be presumptional in the highest degree, and would reveal not only ignorance, but, worst of all, ignorance of our ignorance."

From "Synopsis Materiæ Medicæ," by Dierbach, Extraord. Prof. of Medicine in Heidelberg. Heidelberg and Leipsig, 1841 (Allopathic).

"Manche wollen bei längerem Gebrauche der Cinchonenrinden eine Reihe von Symptomen beobachtet haben, die mit denen der Intermittens nahe übereinstimmen," u. s. w. Vol. I, p. 529.

Respectfully yours,
——, M.D.

Extract of Gelsemium in Rhus Poisoning.

TO THE EDITOR OF "NEW REMEDIES."

DEAR SIR:—In the September No. of your Journal I noticed a quotation from the Louisville *Medical News*, of August 19, which states, "that painting over the inflamed surface with fluid extract of gelsemium sempervirens gives complete relief in poisoning by rhus toxicodendron."

A few days since I was severely poisoned by this plant, and tried the above remedy with great confidence. It was employed thoroughly and persistently, but without the *slightest benefit*, neither relieving the itching and pain, nor reducing the inflammation.

Very Respectfully,
LAURENCE JOHNSON, M.D.
319 W. 26th st., N. Y., Oct. 7, 1876.

* The Science of Homœopathy, by C. J. Hempel. M.D. New York. 1874.

ORIGINAL COMMUNICATIONS.

AMERICAN PHARMACEUTICAL ASSOCIATION.

(Continued from the August number.)

AFTER the election of officers, and the induction of the newly-elected President, the business of the Association was proceeded with. The *Treasurer* reported the receipts during the past year to have been $5,906.91, and the expenditures $4,181.69, leaving a balance in hand of $1,725.22. A committee having been appointed to audit the Treasurer's accounts, they afterwards reported the same correct. Various committees handed in their reports. The *Committee on By-laws* recommended the addition of an article defining the duties of the Committee on Prize Essays, and another defining those of the Committee on Legislation, both of which were adopted at a subsequent session. The *Committee on the Ebert Prize* read their report, which was accepted with the recommendation that no comments should in future be made upon any but the successful paper. The *Committee on the Liebig Memorial* having reported that all the funds necessary for the erection of the monuments had been subscribed abroad, it was resolved that the funds in the hands of the committee be returned to the donors. The *Committee on Maximum Doses* asked for further time, as they had not been able to have sufficient communication with the American Medical Association. The *Committee on Legislation* reported through its chairman, Prof. Maisch, that no material changes had taken place in the legal aspects of the profession during the past year. Dr. F. Hoffmann read the report of the *Committee on Metrical Weights and Measures*, in which the adoption of the system is advocated, both by the scientific profession, and, in course of time, by the people at large, through legal enactment. The *Committee on Photographic Album* was on motion discontinued, and the album placed into the charge of the Permanent Secretary. The report of the *Committee on the Letter of the Tennessee College of Pharmacy* was read, which was to the effect that, taking the statements made as facts, the college is exonerated from all blame, and that it has not departed from a proper course of action. A special *Committee on Mr. Fehr's Complaints* having been appointed at the last meeting in Boston, their report was read; but Mr. Fehr contradicting the statements made by the committee and by other members of the association, and finally declaring that certain statements made by Prof. Bedford were false, Dr. Squibb moved the acceptance of the report of the committee, and the expulsion of Mr. Fehr, for indecorous language to the officers and members of the Association. The motion was carried by 106 ayes against 19 noes. Dr. Squibb then read a volunteer paper on the Administration of Phosphorus, which will be noticed below. After the reading of this paper, Dr. Squibb offered the following resolution:

Resolved, That the American Pharmaceutical Association devote an hour of its third session to a discussion of its interests in the United States Pharmacopœia, with a view to the adoption or rejection of the following resolution:

Whereas, By action of the American Medical Association at its recent meeting in this city, it is proposed to discuss at its next meeting in Detroit, in June, 1877, a proposition for that Association to assume the control of the National Pharmacopœia;

Therefore, *Resolved*, That this Association offers to the American Medical Association its hearty co-operation in the work in any way that the American Medical Association may find the services of this Association most useful.

Resolved, That a copy of this preamble and resolutions, with the discussion had thereupon, be forwarded by the President of this Association to the President of the American Medical Association.

The Association then adjourned until 3.30 P.M.

After reassembling, this resolution was taken up for discussion, and Dr. Squibb explained at length the reasons which induced him to offer the same; the whole aspect of important question is fully set forth in the paper read by Dr. Squibb at the last meeting of the N. Y. State Medical Society, held at Albany, and which we printed in our July number, page 217 sqq. In respect to this question we shall have to say something in the future, and we will only state here that we concur with him in nearly every point. At the close of the ensuing interesting discussion, the following resolution was adopted:

Resolved, That this Association will willingly co-operate with the American Medical Association in the work of revising the United States Pharmacopœia.

The *Committee on Adulterations and Sophistications* read selected portions of their report, which was accepted. On motion of the Business Committee, the Chair appointed Messrs. S. M. Colcord, J. T. Shinn, and J. F. Hancock a *Committee to name the time and place of next meeting.* The session then adjourned.

During the evening meeting a number of papers were read, extracts of which will be given below. At the morning session, held on Saturday, Sept. 16th, the Chairman of the Business Committee offered a resolution, which was adopted, instructing the Executive Committee to carefully revise the Proceedings of this meeting prior to publication, and to expunge therefrom every irrelevant word, and every word conveying personal imputation.

The *Committee on time and place of next meeting* reported that they recommend it to convene at Toronto, Ontario, on Sept. 4, 1877, at 3 P.M. This report was unanimously adopted.

Selected portions of the report of the *Committee on the Drug Market* were read by Mr. Shoemaker, and afterwards the introductory portion of Prof. C. L. Diehl's *Report on the Progress of Pharmacy*, which is without doubt, as it has been in previous years, the most valuable and interesting document presented to the Association.

During the afternoon session Henry J. Rose, of Toronto, Ontario, was elected *Local Secretary*, and the President appointed as *Committee on Adulterations and Sophistications*, Prof. E. Painter, E. H. Sargent, and Dr. W. H. Pile. In spite of the late hour of adjournment the Association again convened somewhat later (at 7.45 P.M.), when the appointment of the following Committees was announced by the President: *Committee on Prize Essays:* Charles Rice, Geo. C. Close, E. P. Nichols. *Committee on Legislation:* Prof. John M. Maisch, S. M. Colcord, W. H. Crawford. The remainder of the session was devoted to the reading of papers, at the conclusion of which resolutions of thanks were offered to the officers of the Association for the able manner in which they had discharged their duties during the sessions of this meeting, and also to the Press of the city for the reports furnished in the several papers. The visiting members, through Mr. S. A. D. Sheppard, returned their thanks to the Philadelphia members for the many courtesies extended. These resolutions having been adopted, the Association adjourned *sine die.*

From the number of valuable papers presented to the Association, many of which will be noticed in future issues, we select some of more immediate practical interest:

SYRUP OF FERROUS IODIDE AND CITRIC ACID: Dr. *Wilson H. Pile*, of Philadelphia, had undertaken the response to a query regarding the admissibility of the addition of citric acid to this syrup, as a preservative against change. His experiments led him to conclude that the preservative action was feeble, or entirely wanting—a statement which led to considerable discussion, other members asserting its beneficial effects.

FLUID EXTRACT OF PAULLINIA SORBILIS. Mr. *G. W. Kennedy*, of Pottsville, Pa., proposes the following formula: Take of Paullinia in moderately fine powder, 16 troy ounces. Stronger Alcohol 8 fl. oz., Glycerine, 4 fl. oz., Distilled Water, 4 fl. oz. Percolate carefully, in the usual manner, 12 fl. oz., pouring on top, if necessary, Dilute Alcohol; set this aside, continue the percolation with Dilute Alcohol until exhausted, evaporate this second portion to 4 fl. oz., and mix with the reserved percolate.

NON-GELATINIZING FLUID EXTRACT OF COTTONROOT-BARK. Mr. *J. M. Lloyd*, of Cincinnati, presented a paper in which he quotes the results of many experiments

made upon cottonroot-bark, both fresh and dry, with various menstrua. All reliable reports from physicians are unanimous in declaring that only the *fresh* bark is therapeutically active, either as a parturient or as a general emmenagogue. In respect to the proper menstruum, he states that a fluid extract made with a mixture of 10 parts by vol. of alcohol, and 6 parts by vol. of glycerine, never gelatinized.

ARSENIC IN THE PHOSPHORUS OF COMMERCE. Mr. *L. Dohme*, of Baltimore, reported the results of his analyses of various brands of phosphorus. That made by Gibbs and Deacon, of Mount Holly, N. J., was proven, by the most careful tests, to be free from arsenic, while two samples (one recent, the other old) made by Albright and Wilson, of Oldbury, England, contained respectively 0.562 per cent. and 1.066 per cent. of metallic arsenic.

WINE OF TAR. Mr. *Chas. A. Heinitsch*, of Lancaster, Pa., recommends to prepare this, either by triturating 1½ troy oz. of tar with ½ troy oz. of magnesium carbonate and 1 pint of sherry wine, and afterwards filtering; or by adding 8 troy oz. of tar to 3 pints of beer, and separating the clear solution from the sediment after 24 hours.

ON THE QUANTITY OF ACACIA NECESSARY TO EMULSIFY FIXED OR VOLATILE OILS. In answer to a query covering this subject, Mr. *E. Gregory*, of Lindsay, Ontario, after reviewing the various processes laid down in standard works or proposed by different authorities, finds the best proportion to be 1 part of acacia to 2 parts of oil, and 1½ parts of water, which is to be added at once. Such an emulsion is more rapidly prepared, looks better, and keeps longer than any other.

ON THE PURITY OF COMMERCIAL CACAO BUTTER. Mr. *Gust. Ramsperger*, of New York, examined a number of samples, and prepared some himself, by expression, and by extraction with ether and carbon disulphide, and found that specific gravity cannot be relied upon as a test; cacao butter obtained from the same source, but by different solvents, showed different specific gravities. Pure cacao butter was ascertained to be readily soluble in 2 parts of ether at common temperature, which solution after a time separates into two layers. But if the substance contains foreign fats (excepting ox-marrow), or wax, or paraffine, it will not give a clear solution in 2 parts of ether.

PYCNANTHEMUM LINIFOLIUM. Mr. *Chas. Mohr*, of Mobile, Ala., read a volunteer paper on the uses and preparations of this plant, which is in considerable demand in the South for the treatment of impaired and enfeebled digestive organs. A chemical analysis made by him established the presence of volatile oil, a caoutchouc like resin, chlorophyll, a bitter resin, coloring matter, gum, sugar, and an acid apparently identical with caffeotannic acid.

ON PHOSPHORUS AND ITS ADMINISTRATION. Dr. *E. R. Squibb* presented to the Association a volunteer paper on this subject, in which he gives the results of numerous experiments made to determine the best form of exhibiting phosphorus. He finds the best form to be a solution in cod-liver oil. For this purpose only the best and purest oil should be used, such as the Norwegian oil; and during the process of solution, the contact of air with the oil must be excluded. This is accomplished by passing a current of carbonic acid-gas over the surface of the oil in the flask, in which the solution is effected. Previous to the introduction of the phosphorus, the flask, which should not be more than three-fourths full of oil, is fitted with a cork and two tubes, one for the ingress of CO_2, the other for its exit; after the air has been thoroughly displaced, and the oil been moderately heated, the proper quantity of phosphorus, previously cooled to about the freezing point of water, is weighed, quickly dried, and introduced into the flask. When solution has been effected, the liquid is drawn off into small vials by a syphon-arrangement so constructed, that CO_2, instead of air, will take the place of the solution as it flows from the flask. This solution is made of such a strength that 100 parts by weight contain 1 part of phosphorus. One minim or ⅓ grain of the solution corresponds to 0.0038 grs. of phosphorus. This solution is made the basis of various other preparations, as for instance, an Emulsion of Phosphorus prepared by adding the cod-liver oil solution very slowly and gradually to glyconin (glycerin and yolk of egg) and mixing it afterwards with sherry wine, etc. Pills prepared from the solution with the intervention of soap and magnesia (of each 1 part), are also proposed. The full formula will be given hereafter. The solution may also be administered in the form of a moist powder; this is accomplished by taking calcium carbonate in fine powder, thoroughly dampening it with ether, in order to expel air and to envelop the powder with a non-oxidizing atmosphere, and then shaking it with the requisite amount of the phosphorus solution. The administration in the form of common capsules is not approved, as nearly all of these are very imperfect coverings; double capsules, however, are perhaps admissible.

THE INTERNATIONAL EXHIBITION.

(Continued from our last.)

IF it were our task to give to our readers some idea of the magnificent display made by FRANCE in *all* departments, it would require many pages to do justice to the subject. But as we have intentionally confined ourselves to the narrower limits of such exhibits as come more especially within our scope, we regretfully leave the description of other attractions to abler hands. Of chemical products, the most interesting and showy are of course the various aniline colors, which are exhibited by several firms; the finest collection is without doubt that of *A. Poirrier*, of Paris, which we would like to see remaining in this country, as the "gem" of some college-museum. Another aniline-firm, *Thomas Frères*, of Avignon, make also a very creditable show, especially of artificial alizarine, of which they produce very large quantities. Crude chemicals are represented by soda and soda-salts, exhibited by several firms. The eye of the passer-by is attracted by some magnificent specimens of refined sulphur, crystallized, fused, and sublimed from the works of *Bonde et Fils*, Marseilles. *Guimet*, of Lyons, exhibits ultramarine of various tints, of fine quality; and *Ch. Torchon*, of Paris, makes a handsome display of chloral hydrate in crystals, blocks, and plates, besides various derivatives of chloral, among them the sulphydrate. On looking about for pharmaceutical preparations, we notice a singular lack of what we may call "regular pharmacy"; the custom of the French being more inclined to a showy and elegant exterior, and a pleasant, alluring taste than to a strict adherence to officinal formulæ. In saying this, we do not mean to convey the idea that the qualities of their products are inferior, but in *this* country we would unhesitatingly place many of the articles exhibited among the class of "patent medicines."

Among the many firms represented, we shall first mention that of *Rigaud et Dusart* (successors to *Grimault et Co.*), of Paris, whose case contains some very fine flavoring extracts, handsome capsules, sugar-coated pills, and a specimen of *powdered* brownish-yellow *pure* pepsine. *J. Valby*, of Dijon, has a great variety of medicinal capsules, or rather perls, of very attractive appearance. *Hottot et Cie.* exhibit their well-known pepsine (Boudault's), peptone, and other digestive remedies. One of the most interesting firms, especially to a friend of ours, is that of *Beslier*, of Paris, who has a very extensive stock of taffetas, and plasters, of all possible compositions, both in bulk and spread. These spread plasters are very handsome and convenient; and if we may judge by the effects of one in particular, a sample of which (Cantharidal taffeta) a friend of the writer was unfortunate enough by accident to have in too close and protracted contact with a very prominent portion of his body, they are certainly equal to anything we have ever seen used before. *Limousin*, of Paris, makes a handsome display of medicinal wafers, apparatus for their manufacture and use, chloral perls, sugar-coated chloral pills, sodium sulphovinate, etc. The interesting exhibit of the manufacturers of surgical and orthopedic appliances will receive a special notice hereafter. *Deleuil*, of Paris, has on exhibition a variety of accurate balances, some of which are of novel construction. One of these consists of a double case, the upper one containing the balance proper, the lower one being intended to permit the attachment of special scalepans for weighing large globes and long-necked

flasks, and for taking the specific gravities of voluminous bodies. It is able to carry 3 kilogrammes, and turns with 5 mgm. They have also on exhibition the identical balance which was used by the International Convention on Metre; it is encased within a strong cast-iron case, with thick glass-lights luted in, air-tight, in front of the index and at the side of the scalepans; at the rear are the attachments for making connection with the air-pump, to produce a vacuum within the case. A considerable space is occupied by the manufacturers of toilet articles and perfumery, in which the French excel.

The display of SWITZERLAND in chemical and pharmaceutical products is rather limited. Of the latter class, there is hardly anything which deserves special mention here; but in regard to the former, the two Basle aniline-firms of *Bindschedler & Busch* and *Durand et Huguenin* require particular notice. The first-mentioned firm has on exhibition an especially handsome sample of fluoresceïne, and one of eosine (or tetrabrom-fluoresceïne), the latter both bluish and brilliant scarlet; besides pure anhydrous phthalic acid in long needles, anthrachinon in beautiful yellow crystals, and a full series of the methyl-compounds. We also noticed the specimens of artificial corundum, sapphire, and ruby manufactured from alumina by *Ruffner-Casper*.

AUSTRIA has not made as creditable a display as might have been expected. Several causes have no doubt brought about this result. In the first place, the Vienna Exhibition of 1873 has placed the products of many Austrian manufacturers so prominently before the world, that many of them consider it unnecessary or unwise to incur a similar heavy expense so soon; and in the second place, the number of articles, for which there would be a market on this side of the Atlantic, is naturally limited. A peculiar natural product of various localities in Austria, however, bids fair to be as extensively used in this country as it is abroad. We mean the fossil wax, prepared from ozokerite (an account of which we gave above, p. 38). The crude substance is exhibited, together with the results of the various processes of purification, and the perfectly pure mineral wax, in all possible colors, and in all imaginable shapes. The firm of *Gustav Wagenmann* has erected an imposing monument, in the shape of a huge pyramid, from cakes and blocks of this fossil wax, adorned with gigantic twist-tapers, blazing in all the colors of the rainbow. *Sarg, Son & Co.*, the great glycerine manufacturers of Vienna, have sent a large collection of their special products, chiefly soaps, candles, and glycerine, among which we noticed a few samples of "crystallized" glycerine, which is now a regular article of trade. The *Austrian Alizarin Manufacturing Company* (*Przibram & Co.*) have likewise sent a very creditable collection of their products, as alizarin, pure and shaded, pure anthrachinon, crude and purified anthracene, etc. The Bohemian glass factories are also well represented; the quality, color and shape of their chemical glassware still excels anything of the kind produced elsewhere. There is no reason, however, why equally acceptable goods should not be produced in this country; take, for instance, the case of funnels: our manufacturers still insist on turning out useless and shapeless funnels, which may be good enough for pouring, but are altogether worthless for filtering. If our domestic funnels were made over a conical mould having an angle of 60°, with perfectly even sides, there would be no need of importing the foreign article at great loss.

The most elaborate preparations were made by GREAT BRITAIN to place before the world as complete a selection of the products of the mother country and of the colonies as possible. In this she was eminently successful. Not only is the collection complete, but so well and systematically arranged, that it affords pleasure to study it.

Crude and heavy chemicals, chiefly soda and allied products, have been sent by almost all prominent manufacturers. *Gaskell, Deacon & Co.*, the *New Castle Chemical Works Co.*, *Jas. Muspratt & Sons*, *Muspratt Bros. & Huntley*, and others have on exhibition soda-ash, caustic soda, carbonated soda, bleaching powder, and other side-products. *Rickards, Kearne & Gasquoine*, of Cheshire, who use the ammonia process, sent samples of the brine from which the soda-ash is produced, the various soda-salts, and specimens of refined sulphur recovered from soda waste, one of the triumphs of modern chemical discoveries. The handsomest specimen of this kind of sulphur may be seen in the collection of *Jas. Muspratt & Sons*. The *Greenbank Alkali Works* have among their exhibits a quantity of large iridescent crystals of potassium chlorate, which are not only very beautiful, but, in our opinion, one of the most curious and interesting objects among chemicals in the whole exhibition. The most plausible way for accounting for this *lusus naturæ* appears to us the following: The crystalline plates are probably built up of a large number of single laminæ, which do not lie in absolute contact throughout the extent of their surfaces, but some of which are attached to the others, by one edge only, a small quantity of air or a trace of mother-water filling the minute interstices. Rays of light, which, if the crystals were one single, uninterrupted body, would pass entirely through it and be reflected without decomposition from a dark underlying surface, are not only deflected while passing downwards through the crystals, but the reflected rays are again deflected and partly dispersed before again emerging. *Calvert & Co.* make a large display of their special products, the successful manufacture and introduction of which is mainly owing to their skill, namely, carbolic and cresylic acid in various grades. They are also large manufacturers of picric acid, and of carbolic soaps. *T. and H. Smith & Co.*, of Edinburgh, have a small but exceedingly interesting collection of their fine chemicals, among them most of the proximate constituents of opium, as codeia, codeia sulphate, cryptopia (of which they are the discoverers) and its muriate, the latter in well-defined crystals; narcotin, morphia and its salts; meconin, narceine, papaverine and meconic acid; thebaia muriate (not less than 138 oz., said to be the product of about 5,000 lbs. of opium), rhœagenina, and thebolactic acid, likewise one of their discoveries. Besides, we noticed some perfectly white "resin" of jalap and of scammony, and some fine cantharidin, and caffein. *Rufus Usher*, of Bodicote, exhibit some English medicinal rhubarb, trimmed, grown by them, from true rhubarb, and scarcely distinguishable from that imported from China. They are also large cultivators of hyoscyamus, and only deal in selected biennial plants. *Morson & Son* have sent an interesting collection of some of their products, as creosote, pepsine, alloin, crystallized aconitia, phosphoric and chrysophanic acids, and pilocarpine, the alkaloid of jaborandi. One of the most conspicuous exhibits in the British department is that made by *Doulton & Watts*, of Lambeth, many of whose stone-ware goods are of great interest to our profession. This firm manufactures stone-ware jars, jugs, and kegs of all sizes, stone-ware evaporating dishes up to 25 galls. capacity, stone-ware worms and condensers, etc., and their price-list would make it appear a profitable speculation, in spite of the duties, to import some of their wares. *Allen & Hanburys* have sent over specimens of their codliver-oil and jujube and gelatine, both pure and medicated. We cannot spare the space for the present to go on enumerating special firms, but may have occasion to mention some other articles of peculiar interest hereafter. We must also remind our readers that our intention has been to notice rather those exhibits which present something new or uncommon, and an opportunity of seeing which may not occur so soon again. In compliance with this plan we will pay a visit to some of the British colonies, and afterwards some other "foreign" countries, without special regard to their geographical or exhibitional location.

The BRITISH COLONIES afford much that excites our interest. MAURITIUS exhibits a number of vegetable products, among them vanilla, and a few specimens of red bark, one of them "renewed." Our readers are probably aware that it has been found profitable to remove only a portion of the bark on one side of the tree, without injuring the cambium-layer, and covering the denuded portion; the bark is re-formed in a few years and may be collected anew. The BAHAMAS send myrtle wax, cascarilla, canella, and arrow-root. The CAPE OF GOOD HOPE has sent a collection of 57 specimens of medicinal herbs in little bags, which make examination impossible; but most of them are familiar to

us. Alongside of this collection lies a small specimen of "Bitter Bark, from Kreli's country (Trans-Kei), stated by Commandant Bowker to be used by the natives against fever." Among the exhibits of JAMAICA we again meet with specimens of cinchona barks, from the Government botanical gardens, namely C. calisaya, C. succirubra, and C. officinalis, together with the trunk of a cinchona tree, about 20 feet long. In addition to these, various cinchona alkaloids are to be seen, as well as oils of lemon, juniper, pimento, and orange; specimens of sarsaparilla, canella (very fine), hog-gum (from Moronobæa coccinea), gum guaiac in a pile of transparent, dark, greenish-brown tears, cola-nuts, candleberry-nuts (from Aleurites triloba), and other medicinal products.

The display of INDIA, which we shall notice here, although it is not a "colony," has been arranged and partly selected under the superintendence of Dr. J. Forbes Watson, Director of the India Museum. Of chemicals we find a considerable number of samples of salt, produced both by boiling concentrated brine to dryness (pungah salt), and by solar evaporation (kurkutch salt). "Black salt" is made by heating certain fruits, etc., with common salt and sajji or crude sodium carbonate containing much sulphate, whereby sodium sulphide is produced; this article is much used medicinally. Saltpetre (or shorah) is exhibited in 14 samples, besides alum, crude sodium carbonate (also called Dhobies' earth or sajji mutti), borax (sohaga or tincal) from the Puga Valley, Ladakh, and Thibet, and sal ammoniac (or naushadar). The manufacture of this latter is curious. It has been carried on for ages by the potters of the Kaithal and Gula tahsils (collectorates) of the Kurnaul district. To obtain it, from 15,000 to 20,000 bricks of a dirty clay or mire found at the bottom of ponds are placed round the outside of each brick kiln; when about half burnt the raw substance from which *naushadar* is made exudes, and adheres to the exterior of the bricks. This is purified by solution, crystallization, and subsequent sublimation in large closed vessels of thin black-colored glass. In Oude it is manufactured from the contents of cesspools.

Among vegetable products we find of interest a number of specimens of Indian materia medica, many of which are familiar to us, while others are mere curiosities. None of them are exhibited, however, in quantity, and the specimens themselves appear to have been much handled. Much interesting information may be gathered from the special catalogue in reference to all these products. Among the notes on oils we find the statement that "sesame seed has of late been largely exported to France, where it is reputed to be used in the adulteration of olive oil." Naturally, as the demand for fine salad oils increases, how can our amiable transcontinental friends fill their orders, in absence of an increased production, excepting by giving us the *quid pro quo?* Verily, not all olive oil has flown from olives, nor yet all French wine been pressed from grapes! "Curdy seed is the seed of Carthamus tinctorius. This yields by expression an oil which, when properly prepared and refined, is transparent and of a light yellow color. It is used in India for culinary and other purposes. This oil deserves more attention than it has hitherto received in this country; and, if once fairly introduced, there is no doubt whatever of its becoming a staple import. It is used in some of the Government workshops as a 'drying oil.' It is believed to constitute the bulk of the celebrated 'Macassar oil.' The seed is exported under the name of Curdee or safflower seed. In Oude it is sown in October, either alone or along the edge of wheat crops; both light and heavy soils are adapted to it. It is cultivated in every village, but not extensively. There would be no difficulty in farther cultivating it to any extent. The cost of the seed, which is called 'Barré,' is 18¾ seers per rupee, and the cost of the oil is from 3 to 4 seers per rupee."

[1 seer = about 38 oz. av., and 1 rupee = 2 shillings, English.]

"Niger seed, from Guizotia oleifera. These seeds of a composite plant are much esteemed as an oil seed, and, as such, enter into European commerce. The plant is commonly cultivated in Mysore and the Deccan. The oil is sweet-tasted, and is used for the same purposes as Gingelly oil."

Mustardseed oil, peanut oil, castor oil, physic nut oil, and a number of seeds yielding other oils are among this collection. The Chinese market is supplied from India with such delicacies as edible birds' nests, and sharks' fins. The former are collected from the rock caves along parts of the Burmese coast, the Andaman and Nicobar Islands. The nest is composed of inspissated mucus from the large salivary glands with which these birds are provided. The latter are largely exported from Bombay and Madras to China, where they are much esteemed, being used for the making of soups. From 7,000 to 10,000 cwts. are annually exported there from Bombay.

The most important of all Indian products is, however, opium. The Government bestows the utmost care upon its production and manufacture, and, whatever may be said about the morality of the trade, no complaints can certainly be made about the quality of the product. At the risk of giving information which may not be quite new to some of our readers, we comply with special request in reproducing here the very interesting report of Mr. R. Saunders, Collector at Ghazeepore, on

THE MANUFACTURE OF OPIUM IN INDIA.

The cultivation of poppy in India can be traced back as far as the sixteenth century. An allusion is made to the opium and saltpetre monopolies of the Emperor Akber in the reign of Queen Elizabeth, in the celebrated Ayeen Akbery of Abul Fazl, prepared during the later part of the sixteenth century.

The poppy plant has been cultivated in Nepaul for years, doubtless for as long or longer than in Bengal and the north-western provinces; and it may be that the opium from India was first introduced into China by the Nepaulese, and afterwards by the Dutch, who used to purchase the drug for export, long before the East India Company held possessions in India.

The process of the manufacture in India at the present date is as follows: About the end of January the poppy plant commences to flower, and continues till March; the petals are watched, and are carefully collected in the following manner: The forefinger and thumb encircle the stem just beneath the pod, and with the other fingers drawn inwards a kind of tube is formed; this tube is then gently raised straight over the pod, and if the petals are matured they come off. They are never plucked off, as it would injure the pod. When a sufficient quantity has been collected in this manner, the cultivator proceeds to manufacture them into flat cakes, something like pancakes, or, as they are technically termed, flower-leaves, and the opium cakes are wrapped in those leaves.

The manufacture of the flower-leaf is simple and inexpensive. A circular-ridged earthen plate, about 12 inches in diameter, is placed over a slow fire, the required quantity of petals is then placed in it, and pressed with a damp cloth pad till they have adhered together; the flower-leaf is then removed and allowed to dry, when it is ready for use in the manufacture of opium. In February the poppy plant is pretty well advanced, and the prospects of the season can then be fairly ascertained. In some instances in January, but generally in February and March, the pods mature, and are lanced in the afternoon; the opium is allowed to exude and remain on the pod till the next morning, when it is scraped off gently with a small iron scraper, and the thumb or finger is then run over the incisions to close them. The number of incisions required to complete exudation of all the juice varies, and ranges from one to five and six, and occasionally to seven and eight in some isolated cases. The opium thus collected is placed in earthen or brass vessels slightly tilted, to drain off the dew and any opium juice it may contain; and when the whole of the drug is collected and thus treated it is carefully manipulated, put into a new earthen pot, and set aside in some ventilated and safe place. Should the opium be of low spissitude, it is exposed in some shady place (not in the sun), turned over occasionally and very carefully, so as not to injure the grain, and is so treated till it reaches the required consistence, and remains in the custody of the cultivators until it is weighed. After the opium has been extracted,

the pods are allowed to dry, and are then broken off, and the seeds collected. An ample quantity is kept by the cultivator for next season's sowings, and the remainder disposed of to the traders.

The leaves of the plant are left on the podless stalks, and when withered are collected and delivered into the Government opium factory, and termed technically *trash*, for packing the opium balls in the chests, for which payment is made at the rate of annas 12 a maund.*

The flower-leaves are weighed in March and April, and are sorted into classes. The first is of fine texture and color, and from 8 to 10 inches in diameter; the second slightly inferior in both texture and color, and the third is of a roughish and thicker quality; as sorted they are weighed, and the weight of each quality is entered in the leaf weighment-book, when the value of each quality is calculated at the rate of Rs. 10, Rs. 7, and Rs. 5 a maund. The flower-leaves are dispatched by country boats or carts to the factory at Ghazeepore, and on arrival are weighed, examined, and classified.

Before the opium weighments commence, the several books are prepared; new earthen jars and pots, with covers, are purchased and carefully weighed; coarse cloth, sealing-wax, and twine for closing and sealing the jars, and baskets for holding the filled jars, are also purchased; every scale, beam, weight, pan, and reservoir is carefully examined and tested, and then the weighments take place.

After the opium has been brought in by the cultivators, it is tested, and samples of each consignment are taken for a careful chemical analysis to the opium examiner's room to detect adulteration. The opium is then stored in large wooden vats.

The pure opium which is fit for the China provision, and the consumption of the local market, is stored in large wooden vats, each holding about 50 maunds (about 1¾ tons weight); the opium derived both from the assameewar and chullan sources is not stored promiscuously, but each parcel, according to its class, is emptied into a vat bearing the designation of that class; the light divisions are arranged in lines. As much opium as can be removed from the vessels by light scraping is taken; that which adheres is afterwards removed by second scraping, and set aside for *lewah*, and that which persistently adheres is removed by water—this is called washings, and when evaporated is used in making lewah; the washings alone are valued at about Rs. 65,000 a season at Ghazeepore factory, and the opium thus recovered amounts to over one ton in weight.

When a vat is filled, the opium in it is stirred by long wooden poles, daily, until the drug is used for caking.

When there are about 2,000 maunds (about 75 tons) stored (there are accommodations for upwards of 6,000 maunds), if the proper quantities of the various consistencies are at hand, caking can commence. One may ask, but why have you not caked before you collected so much? The reply is, we are bound by order to cake at a consistence of 70°; that is, when the opium contains 70 per cent. of the pure dry drug and 30 per cent. water. We are allowed—as it is very difficult to hit off the consistence of 70° exactly when manipulating such a large quantity (nearly three tons) as we require daily for caking—to cake when the assay shows the opium to be above 69.50° and under 70.50°, so that we are allowed half a grain above and below the standard of 70°.

To prepare the opium for caking, a certain number of vats are marked of each class; a long iron instrument, something like a cheese-taster, is thrust from the top to the bottom of the vat (it forms half a hollow cylinder when open, and a complete cylinder when shut), and closed; the sample of opium is withdrawn, the contents of the sample drawn are thoroughly mixed up, and three specimens of 100 grains are assayed; the mean of the three results is taken as the correct consistence. By the same process the samples from all the vats, which have been marked, are taken and assayed; those which will give, when mixed together in certain proportion (by rule of alligation), opium at a consistence of 69.30 or 69.40° are exported to the alligation vats, and the contents of the selected vats are equally distributed over the seven alligation vats, so that the consistence of each may be uniform; the opium is then well mixed by rakes and by men walking about in it, and kneading it with their feet. At about 3 P.M. it is removed from these vats into the five caking vats; equal quantities being taken from each of seven alligation vats are distributed over the five caking vats. On the following morning the opium in each vat is again mixed by six men allotted to each from 5 A.M. to 8 A.M. Four samples are drawn from each vat, and thoroughly incorporated together, and three specimens from this mass are taken for assay; this pertains to every caking vat. Should the whole of the assays of each caking vat come out above 69.50° and under 70.50°, the agent of the Ghazeepore factory gives the order to cake, or in his absence the principal assistant does so.

The cultivation of the poppy plant is rendered as far as possible both profitable and popular.

A large room, 944 feet long by 27 feet wide, accommodates the 250 cake-makers; each cake-maker has a number and a place assigned for him to work at, the cake-maker's number being printed on the wall above his seat. Each man is provided with a wooden seat, and is furnished with a brass cake-mould, forming the half of a hollow sphere; he has also a tin vessel graduated so as to hold 4½ chittacks of lewah, the regulated quantity which is used in making the shell of each cake.

The opium produce per beegah ranges from one to fifteen seers, according to the quality of the soil, and the attention and care bestowed on the cultivation, and state of the weather. The profit varies and ranges from Rs. 1 to Rs. 50, or upwards, per beegah.

The following materials are used in making a cake, and as it is necessary that every cake should be of the same weight, viz., two seers, every precaution is taken to insure the accurate determination by weight or measure (calculated for weight from actual experiments) of the articles which compose the cake. The proportion of each article is given in the table below:—

	Seers.	Chittacks.
Standard opium at 70	1	7.5
Lewah at 53	–	4.5
Flower leaves	–	5.0
Water	–	0.5
Trash	–	0.25
Total weight of cake on the day of manufacture	2	1.75

The lewah now demands attention. Lewah is a paste made by breaking down opium in water which has been used for removing the traces of opium which adhere to the jars and vessels in which opium has been placed; this is called washings or technically *dhoe;* the washings contain about 8 to 10 per cent. of opium; the opium is broken down in large vats containing about 800 cubic feet, and about eight per cent. of pussewah is added to the lewah to render it smooth and glutinous.

When the lewah has a consistence of over 52.50° and under 53.50°, it is called standard lewah; its consistence is determined every morning by assay, and until it is of the proper degree, caking cannot commence.

The lewah is delivered in bulk by weight, and the quantity to be used for each cake is measured by a brass cup which delivers 4½ chittacks at 53°.

The poppy flower-leaves agglutinated by the lewah form the shell of the cake; five chittacks of dry leaves are required for each cake; but as the leaves vary in weight according to the amount of moisture in the atmosphere, ten seers are steam-dried daily to ascertain how much moisture they contain; knowing this, an exact increase or decrease in the weight of leaves can be made, which is required to compensate for the moisture contained. This control is necessary, since if five chittacks of leaves are used, which con-

* Explanation of Weights and Measures occurring in the text: one maund = 37⅓ kilos; one maund = 40 seers; one seer = 16 chittacks; one rupee (Rs.) = two English shillings; one rupee = 16 annas; one beegah = one-thirtieth acre, English.

tained much moisture, when the leaves parted with that moisture by evaporation in the dry months, the cakes would be light.

The loss in weight which the leaves sustain by steam-drying is determined on the day previous to their being required for use; the bulk required for the caking of the next day is weighed out and damped in the afternoon, so as to render the leaves supple and pliant; when dry they are crisp and break readily.

Having explained the preliminaries of caking, the method will now be described. Down the centre of the room the scales for weighing opium and the lewah vats are placed; there is a weighman for each scale and two assistants; the weighman weighs the opium on a very delicate scale, and one assistant searches the opium to ascertain finally that there are no extraneous matters in it; the second man arranges the movable tin-pan, and places the opium on it.

When caking commences the caking vat room doors are opened, and the opium is brought out in tinned sheet-iron vessels holding 20 lbs. each. One vessel is set before every scale, and a sufficient quantity for one cake having been searched, is handed over to the weighman's second assistant, who adjusts the quantity in the pan. When the weighman declares it to be correct, the tin-plate with the opium is taken away by a boy to his cake-maker, who has been supplied in the meantime with a tin-cup filled with the requisite amount* of lewah for a single cake; he has also received the proper quantity† of leaves for one cake. Having these by his side, he now rapidly forms in the brass mould the lower half of the shell of a cake, pasting by means of the lewah, leaf over leaf, until the thickness of about seven-sixteenths of an inch has been obtained. He allows in so doing the upper part of some of the leaves, which he tears in half and places vertically, to hang down outside of the mould (with these he forms the upper half of the cake). The cake shell is principally made of half leaves vertically placed, other halves being inserted horizontally, so as to give equal strength in all directions. Having finished the lower half of the shell, he takes the tin-plate, and accurately, to a grain, removes the opium into the half of the shell now ready for its reception; it is pressed upward into the shape of a cone, some pieces of leaves are applied horizontally to it, then some lewah, now some of the parts of the leaves hanging down are pulled up and secured, more pieces are applied horizontally, and at last, having pulled up and properly arranged all the pieces of the leaves which were hanging around the cup, a whole leaf is applied to the top, and the cake is now finished.

It is a sphere of about the same size as a 24-lbs. spherical shot; it is removed from the mould and dusted with a little coarsely powdered poppy trash, so as to prevent its adhesion to the cup, made of burnt unglazed pottery which is of the same shape as the mould in which the cake was made. It is now carefully placed in the cup while still soft, and it is carried out by the cake-maker's boy, who puts it in the sunshine on a little square of brick flooring, which has been allotted to the cake-maker whom he serves, and where a small board stands bearing his master's number.

Before removal a paper ticket is pasted on the cake bearing the cake-maker's number, and the date on which it was made; every cake has its ticket, so that we can at any time trace its history, and by this means we can hold every cake-maker responsible for the careful manufacture of his cakes; by means of these tickets, should anything be found wrong with any cake, it can be brought home to the man who made it.

The caking begins generally at 10 A.M., and lasts till half-past one or two o'clock in the afternoon; usually 20,000 cakes are made daily.

The cakes are on the evening of the second day counted and sent to their destination in one of the cake godowns, where they and their cups are stored in rakes.

The great object to be attained is to make the cake as carefully and compactly as possible by one operation, to have the shell even in thickness throughout, and to spread the lewah uniformly between the leaves. This can be obtained by good cake-makers under strict supervision; cake-makers usually make 60 cakes a day; every good cake-maker gets 20 or more additional ones to make, for which they receive an extra allowance.

The flower-leaf forms an excellent covering; it is in every way suitable, but it has its drawbacks. It is affected by wet, and is liable to be attacked by mildew, borers, and white ants, while it will not resist hard pressure applied to any small area of its circumference; however, it certainly most effectually retains the moisture and aroma of the drug enveloped in it, and by its own fragrance adds to that which the opium *per se* contains.

The cake godowns are large and high brickwork buildings, with galvanized iron roofing, well ventilated by numerous windows and doorways. The windows have iron gratings fixed in the masonry outside, and skeleton doors are provided for the best godowns, to admit of the entrance being closed, while free perflation of air is not interfered with. All the doors and windows of the better class godowns are further secured from thieves by galvanized wire netting, so that cakes cannot be cut up and passed out in large pieces.

Inside the godowns are wooden racks, extending nearly up to the roof; there are intervening rectangularly-placed passages traversing the frames to permit of ventilation. In these racks the cakes are stored in their cups.

Every third day the cakes, wherever placed, come down to the ground, are lightly hand-rubbed with a little trash, turned, replaced in their cups, and sent up again to be placed in the racks. The object of turning is to allow the shell of the cake to dry evenly.

The packing takes place only in dry weather, and after the morning dew has been dispersed.

Into a strong mango-wood chest, one yard long and two feet four inches wide, 40 cakes are packed in two layers of 20 each; the balls are prevented from rolling about by each one being placed in a compartment; and in these chests, varying in number, according to the year, the opium cakes find their way to Calcutta, whence they are shipped to China at the close of the annual Government sales, each chest realizing as much as 30*l.*, or in other words, 1,000 rupees, in an average good season."* *R. Saunders, Collector of Ghazeepore*, 1873.†

BRITISH GUIANA exhibits bay rum, palm oil, greenheart seeds (from Nectandra Rodiæi, or bebeeru), cayenne oil, laurel oil (from Daphne opifera), cassareep (the brown liquid extract prepared from Janipha Manipot), crab oil (from Carapa Guianensis), vanilla, isinglass, and glue made from the bladders of Silurus Parkeri, and some other products. One of the most instructive collections, though not particularly in *our* line, is that of NEW ZEALAND. This remarkable land offers, especially to the geologist, an inexhaustible source of study. The geyser-terraces of Rotomahana, which cannot fall far behind similar formations in our own Yellowstone Park, the numerous relics procured from caves (from the cave period), the skeletons of the gigantic extinct moa bird (Dinornus Elephantopus), drawings or specimens of all of which are exhibited, will always attract intense interest. The visitor will also notice an extensive collection of Gum Kauri, or Cowrie (or Cowdie), a resinous exudation of Damarra australis, which is dug up from the ground in lumps varying from 1 to 300 pounds. The price of this useful resin varies from $165 (half-scraped) to $350 (scraped and clear) per ton. TASMANIA sends specimens of sea-weed in shreds, and jelly prepared therefrom; also a collection of 300 varieties of seeds of native trees, shrubs, and plants. QUEENSLAND'S exhibit contains, among other things, samples of Ching's pure Dugong Oil, which may be used for cooking, as a substitute for butter, or, medicinally, for the same purposes as cod-liver oil. There are, of course, many other interesting things in the vast collections

* 5 chittacks. † 2 chittacks.

* According to the Blue Book, ordered to be printed July 29, 1873, p. 10, the price per chest for 1871–72 was 139*l.* or 26*l.* higher than the preceding year. The net profit on each chest was 90*l.*

† *Catalogue of India Collections* at Internat. Exhib. See also *Pharm. Journ. & Trans.* Feb. 14, 1874.

of these departments, but many of them are rather out of our line.

There are several smaller countries, the exhibits of which contain much that is of interest. CABO VERDE, one of the dependencies of Portugal, has sent a very creditable collection of vegetable medicinal products, which may be found in Agricultural Hall; among them not less than 15 different varieties of castor-oil beans, some of them nearly ¾ inch long; a number of oils, as oil of sesame ("gergelim"), peanut ("mendobim") oil, palm oil; grains of Brindão (the resinous exudation of Vateria Indica), various fish oils, and even a sample of native petroleum. SAN THOMÉ E PRINCIPE, an island colony of Portugal in the bay of Guinea, has sent specimens of native gums, as black, red, and white copal, gum acayú, gum arabic, caoutchouc, and dragon's blood; besides handsome samples of ginger, Malaguetta pepper, canella, and sulphur. VENEZUELA has an interesting collection of medicinal and useful vegetable products in the lower end of Agricultural Hall; among them copaiva-bark, from Copaifera Jacquini Desf. (s. officinalis L.), sarrapia or tonca beans, torco bark from Croton Melambo Krst., Bosua bark from Xanthoxylum ochroxylum DC., orore gum from Pithecolobium hymenæfolium Bth., and others of lesser interest.

EGYPT makes a very poor display in pharmaceutical or chemical products. The collection which we noticed was sent by the Government Museum, but is in such a dilapidated and neglected state, that it is a wonder it was ever suffered to remain. Indeed the exterior appearance and the apparent qualities of the contents would seem to show more what they cannot than what they can do in Egypt. A private firm, Heller & Goldschmidt, of Cairo and Trieste, has in a measure made up for this; they have sent a very complete and well-arranged collection of the natural products of Egypt; among others, a fine collection of the various gums collected in the Soudan and along the coast of the Red Sea. The National Museum also exhibits a number of cakes of opium, the cultivation of which has of late been considerably extended.

Although harassed by internal strife and suffering from chronic impecuniousness, TURKEY has nevertheless managed to make a very creditable display. It would be quite natural here to look about for our old acquaintance, opium, nor do we have long to seek, before we encounter an array of some 14 jars belonging to the Governmental exhibit and containing specimens varying from a few ounces to over a pound of the different kinds of opium from Aleppo, Angora, Aydin, Balahissar, Bosne, Djar Bekr, Kjutahiah, Koniah, Maralitch, Monastir, Nalikhan, Saloniki, Siwrihissar, and Taushanly. Larger samples are exhibited by *H. A. Holstein*, of Constantinople, who represent the opium trade of various towns and districts of Asiatic and European provinces of Turkey. A variety of fine essential oils are also on exhibition, especially oil and essence of rose, oil of geranium, origanum, and orange. Several samples of scammony root are met with and various specimens of resin of scammony, among them a large, costly lump weighing between 30 and 40 lbs., of high test. A very curious article is labelled "Coque de Trehala," that is, "cocoon of Trehala;" it is the cocoon of a beetle, and is accompanied by a sketch showing how the substance "tigala" is produced therefrom, and from this "Trehalose sugar."

Among the MEXICAN exhibits we notice an interesting collection of medicinal or useful plants, sent by the Sociedad Mexicana de Historia Natural. Among them is a specimen of Cinchona Calisaya, consisting of flowers, fruit, and bark. That the cultivation of cinchona, which was inaugurated by the late Emperor Maximilian, has already made considerable progress, is attested by some specimens, grown and exhibited by *Hugo Fink* near Cordoba, representing C. officinalis, C. succirubra, and C. calisaya. Of other familiar subjects, we took notice of an extensive display of vanilla, some very handsome jalap, vegetable wax from a species of Myrica, and last, but not least, of the rich array of mineralogical products, chief among them the two-ton lump of silver, which everybody knows about, and some beautiful specimens of native and almost absolutely pure sulphur from the volcano of Popocatepetl.

REMARKS ON THE PHARMACOPŒIA OF THE UNITED STATES.

BY DR. JOHN C. PETERS, OF NEW YORK.

No. 3.

THE following were the rules which the original framers of our Pharmacopœia adopted for their guidance: (See Preface to first edition, 1820.)

1st. It was determined to select from all the substances, vegetable, mineral, and animal, which possess medicinal power, those only, the utility of which was most fully established and best understood. But it was also admitted that the value of the whole Pharmacopœia depended upon the fidelity with which it conformed to and elucidated the medical knowledge of the day in its most scientific and practical state.

2d. It was resolved that a truly National Pharmacopœia should only be established by the advice and consent of a great majority of all the most influential medical corporate bodies, especially of the State Medical Societies and Colleges, as in them were enrolled all the most advanced medical men, with whose assistance only could a complete work be formed and maintained authoritatively in all parts of the United States.

3d. It was directed, that in the selection of a list of articles for the daily use of the medical men of the United States, the delegates should bestow that degree of careful inquiry, mature deliberation, and wise compromise, that the importance of the subject demanded, in order that the necessities of sick people of every degree, and the requirements of medical men in all sections of the country might be fully provided for.

4th. It was assumed that the great faults of the lists of the Materia Medicas of foreign countries had always been a redundancy of insignificant or useless articles, with a deficiency of powerful and reliable remedies. This was supposed to be the case, because the number of medicines which any individual physician actually employs, always falls very far short of the large number furnished in every Pharmacopœia; and that many of them were retained on the lists from habit and routine, rather than from faith, or even prejudice, and much less from absolute necessity, or strict scientific requirement.

5th. It was decided, that as the constant progress of medical discovery continually tended to the introduction of new articles into the Materia Medica, this would soon grow to an unwieldy and cumbersome size, unless this otherwise unavoidable enlargement was regularly followed by a correspondingly wise and methodical retrenchment of all superfluous medicines. But it was also resolved that omissions from the once established list should only be made when the articles dismissed were found to be unsafe, or inert, or were abundantly superseded by substitutes, both more powerful, accessible, and manageable.

The primary list of the Pharmacopœia of 1870 is a reasonably good one, though there seems to be no sufficient reasons why garlic, sweet almonds, starch, water, oatmeal, caraway, catnip, cochineal, liquorice, figs, fennel, barley, lemons, orange-peel, marble, honey, flaxseed oil, os or bone, oyster shells, sugar, sage, suet, molasses, raisins, vanilla, red and white rose leaves, prunes, pimento, and many other simples and trifles, should not be remanded to the secondary list, or even to a tertiary, in company with asarum, or wild ginger, calamus, carrot seeds, turmeric, quince seeds, elecampane, orris root, balm, ginseng, parsley, madder, scullcap, tansy, violet, etc., etc.

In the secondary list, apocynum, or American Indian hemp, koosso, toxicodendron, and others, are worthy of promotion to the primary list. While aralia nudicaulis, and spinosa, azederach, safflower, prinos or black alder, sabbatia, simaruba, spiræa, and others, have probably never been used since they were first admitted to the list in 1820.

Dr. John B. Biddle, Professor of Materia Medica and General Therapeutics in the Jefferson Medical College, Philadelphia, whose Materia Medica is based upon the Pharmacopœia of the United States, and who delayed the publication of his fifth edition, long after the fourth was

entirely exhausted, in order to conform to the improvements and alterations which were to be expected in our National Therapeutical Guide, does not even deign to mention many of the remedies so long retained on the secondary list of the United States Pharmacopœia; although his book aims to give an account of the articles in general use in the United States.

This practical man and teacher has no time or space to devote to apocynum androsæmifolium, asarum, asclepias incarnata, Syriaca or tuberosa, carthamus, curcuma, euonymus or wahoo, blue gentian, helianthemum, hepatica, iris versicolor, lappa, lycopus, panax, polygala rubella, solidago, triosteum, or other kindred remedies with uncouth names.

When so many tried and valuable remedies have vainly been waiting for ten or twenty years for admittance into the Pharmacopœia of the United States, it is perfectly natural that the patience, and even the loyalty of many physicians to what should be a standard work, has been so long strongly tried that they have thrown off almost all allegiance to it.

It is true that almost all these obsolete remedies are treated of in Wood & Bache's Dispensatory, but a valuable, or at least interesting, standard Materia Medica could easily be made, limiting itself exclusively to the remedies and preparations adopted in the United States Pharmacopœia. Then loyal American physicians would know exactly where they stand, and could easily estimate how much they owe to the diligence and sagacity—and how much they have been deprived of by the stolidity—of some of the delegates to the National Convention of 1870, for revising the fifth decennial revision of the United States Pharmacopœia.

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[We desire to direct particular attention to this work, which is the *most complete, lucid, and intelligible exposition of the modern chemical theories in all their bearings*, and which it is a pleasure to read and a profit to study.]

Woodhull (Alfred A.). Studies, Chiefly Clinical, on the Non-Emetic Use of Ipecacuanha: With a Contribution to the Therapeutics of Cholera. J. B. Lippincott & Co.

Purdy (Alfred E. M.). The Medical Register of New York, New Jersey, and Connecticut. Vol. XIV. G. P. Putnam's Sons. 1876.

Gross (Samuel D.). A Practical Treatise on the Diseases, Injuries, and Malformations of the Urinary Bladder, the Prostate Gland, and the Urethra. Third edition. Revised and edited by Samuel W. Gross, M.D. Henry C. Lea.

Ziemssen (Dr. H. Von). Cyclopædia of the Practice of Medicine. Vol. VI.: Diseases of the Circulatory System, together with Chapters on Whooping Cough, Diseases of the Lips, and Cavity of the Mouth, and Diseases of the Soft Palate. William Wood & Co.

Playfair (W. S.). A Treatise on the Science and Practice of Midwifery. Henry C. Lea.

Pamphlets.

Bayles (George). Clinical Study of Diphtheria in 1875. Apparent Warrant for New Views and an Abortive Form of Treatment. Privately published.

Thomas (T. Gaillard). Remarks upon the Enucleation of Uterine Fibroids, with Illustrative Cases. Privately published.

Bulkley (L. Duncan). Analysis of Six Hundred and Seventeen Cases of Skin Diseases. Privately published.

Eighth Annual Announcement of the Indiana Medical College, Indianapolis, Ind.

Annual Announcement of the Hospital College of Medicine, Louisville, Ky.

Peaslee (Edmund R.). Incission and Discission of the Cervix Uteri. D. Appleton & Co.

Otis (Fessenden N.). A Clinical Lecture on the Treatment of Incipient Structure of Otis's Operation. Privately published.

Toner (J. M.). An Address on some of the Leading Public Health Questions. Privately published.

Yamlel (David W.). A Clinical Lecture on the Use of Plastic Dressings in Fractures of the Lower Extremities. Privately published.

NEW BOOKS.

Proctor (William). Notes on the Practical Chemistry of the Non-Metallic Elements and their Compounds. 12mo, pp. 142.

Sowerby (J. E.) and Johnson (C. P.). British Wild Flowers. New edition, with Supplement by John W. Salter; and the Ferns, Horse-Tails, and Club-Mosses, by John E. Sowerby. Royal 8vo.

Blyth (Alexander Winter). A Dictionary of Hygiene and Public Health. Comprising Sanitary Chemistry, Engineering, and Legislation, the Dietetic Value of Foods, and the Detection of Adulterations, on the basis of the "Dictionnaire d'Hygiene Publique" of Prof. Ambroise Tardeau, with map, diagram, and 142 illustrations. 8vo.

Johnson (C. Pierpont). The Useful Plants of Great Britain: a treatise upon the principal native vegetables capable of application as food, medicine, or in the arts and manufactures. Illustrated by John E. Sowerby. London.

Bridge (J. J.). Diet for the Sick: being nutritious combinations suitable for severe cases of illness. 16mo.

Browne (W. A.). The Money, Weights, and Measures of the Chief Commercial Nations in the World; with the British Equivalents. 5th edition, 12mo, pp. 96. London.

Enquiry into the Nature and Results of Electricity and Magnetism. Post 8vo. London.

Hungarian Aperient Water. An account of the History, Chemical Composition, and Curative Properties of the Hunyadi Janos. 8vo. London.

Madden (Thomas More). The Principal Health Resorts of Europe and Africa for the Treatment of Chronic Diseases. 8vo, pp. 300. London.

Caldwell and **Breneman** (Professors). Manual of Introductory Chemical Practice. For use in Colleges and Normal High Schools. 16mo.

Colin (Alfred). The Universal Metric System. Prepared especially for Candidates for Schools of Science, Engineers, and others. 12mo.

Cooper (Elwood). Forest Culture and Eucalyptus Trees. 12mo, pp. 240.

Legg (J. Wickham). A Guide to the Examination of the Urine. Designed chiefly for the use of clinical clerks and students. London. 4th ed., 12mo.

Meadows (Dr. Barr). The Errors of Homœopathy. London. 3d ed., 12mo., pp. 63.

Depiereis (H. A.). Le Tabac. Paris. 8vo. Thesis.

Boucheron (H. A.). Essai d'Electrothérapie oculaire.

Honzé (de l'Aulnoit). Expériences sur la force élastique des bandes et des tubes en caoutchouc par la méthode des poids. Lille. 8vo., pp. 41.

Senac-Lagrange. Mode d'action des eaux sulfureuses. Paris. 8vo., pp. 96.

Comandré (Dr. A.). Du choix d'une station Thermale.

Delefosse (Dr. E.). Procédés pratiques pour l'analyse des urines, des dépôts, et des calculs urinaires. Paris. 8vo., pp. 74. 68 figures.

Cazeneuve (Paul). Recherches de chimie médicale sur l'hématine. Paris. 8vo, pp. 77. 2 plates.

Guillaumet (Paul). Du traitement des ulcérations chroniques (syphilis, scrofule, etc.), et des plaies atoniques par le sulfure de carbone. Paris. 8vo., pp. 63.

Hedouin. De la médication marine, ses indications, ses contre-indications, ses avantages dans le traitement de la glycosurie. Paris. 18mo.

Bourgoin (A. Edme). Principes de la Classification des Substances Organiques.

Engel (M. R.). La Série Grasse et la Série Aromatique.

Classen (A.). Précis de chimie analytique. 2 partie: Analyse quantitative. Liège. Part 1st, 8vo.

Bolley et Kopp. Manuel Pratique d'Essaies et de Recherches chimiques, appliqués aux Arts et à l'Industrie. 2d ed., 8vo.

Pasteur. Études sur la Bière et ses Maladies. 12 plates. Royal 8vo.

Rose (Sadebeck). Elemente der Krystallographie. Berlin. 2 vols., 8vo.

Jeannel (Dr. J.). Formulaire officinal et magistral international. Paris, 1876. 2d ed., 12mo.

Debray (H.). Cours élémentaire de Chimie. Paris, 1876. 2 vols., 8vo.

Robin (Charles). Mémoire sur le Developpement embryogénique des Hirudinées. Paris, 1876. 4to., pp. 472. 19 plates.

Schmidt (F. X.). Chemie für Metallarbeiter. Stuttgart. 8vo.

Winterberg (A.). Die Salicylsäure im Dienste der Menschen. Wien. 16mo.

Stresemann (R.). Über die Stickstoffbasen des Propyl. Dresden. 8vo.

Jahresbericht über die Fortschritte der Chemie und verwandter Theile anderer Wissenschaften. Herausg. von Alex. Naumann. Für 1874. 3tes Heft. 8vo.

Didelot (V.). Falsifications des Vins. Procédés pour les reconnaître. 8vo. pgg. 8. Nancy.

Kolbe (H.). Ausführliches Lehrbuch der organischen Chemie. Vol. 3, part 1., ed. E. V. Meyer und A. Weddige.

Städler (G.). Leitfaden für die qualitative chemische Analyse organischer Körper. 7th ed. 8vo. Zürich.

Rügheimer (L.). Ueber einen neuen Alkohol (Phenylpropylalkohol) im Storax, und die Produkte der Einwirkung von Wasserstoff im status nascendi auf Zimmt und Alkohol. 8vo. Tübingen.

Textile Colourist, the. A Monthly Journal of Bleaching, Printing, Dyeing, etc. Ed. by Chas. O'Neil. Vol. 1. 8vo. 580 pgg. Manchester.

Béchamp (A.). Lettres historiques sur la chimie, addressées à M. le professeur Courty. 8vo. Paris.

Hanbury (D.). Science Papers, chiefly pharmacological and botanical. Ed. by Jos. Ince. 8vo. London.

Leclerc (Dr. Lucien). Histoire de la Médecine Arabe. Exposé complet des Traductions du Grec. 2 vols. 8vo. pp. 587, 527. Paris, 1876.

Howard (J. E., F.R.S.). Quinology of the East Indian Plantations. Parts II., III. London, 1876.

Denman (Jas. L.). Wine and its Counterfeits. 8vo. Lond. 1876.

PHARMACEUTICAL SUNDRIES AND NEW INSTRUMENTS.

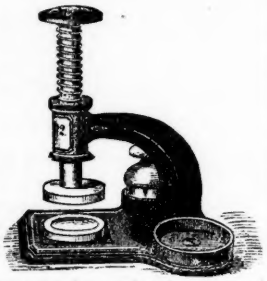
McKesson & Robbins' Perfumes.

THE time has about arrived when the apothecary who has an eye to holiday trade needs to be considering what he shall add to his stock to make it more salable. Among the

recent additions to the line of perfumes which are offered in such numbers for his choice, the wares recently introduced by McKesson & Robbins are among the most attractive. The adjoining cuts show the styles of bottles, the larger having bal

stoppers and containing 1 lb. by weight of superior bouquet; the smaller ones resembling liquor bottles in miniature, being made of amber-colored glass and covered with metal caps. The prices for each, including bottles and stamps, are, for the first, $3.50 per bottle, and for the second, $1.50 per dozen, with a showy box.

Limousin's Wafer Capsules.—Neidlinger Brothers, of 100 William street, have a new iron press for cementing the edges of wafer capsules, which is cheaper than their Multum in Parvo Press, described on page 56 of our February number. Its price of $5.00, net, includes that of the necessary fixtures, viz., a dozen of each size of wooden mould for three sizes of wafers, and moisteners and dies for each size.



Air-tight Medicine Bottle.

All physicians who are in the habit of using the hypodermic syringe to any extent must have been annoyed by the constant leakage of the liquid in the bottles supplied in the cases usually sold. However well the stoppers may fit, whether of cork, vulcanized rubber, or glass, the liquid will by capillary attraction insinuate itself between it and the bottle, effloresce, dirty the case, and rust the needles. The only method of avoiding this is to place the liquid in hermetically sealed bottles. The Messrs. Tiemann have invented for this a very ingenious arrangement. A small graduated glass bottle is so arranged that it is hermetically sealed by means of a hard rubber stopper. When you wish to fill the syringe the nozzle is placed in the side hole of the stopper, the glass is then turned up and rotated until it stops. Communication between the syringe and bottle is now open. Draw the piston back and the liquid follows, without any admixture of air. Turn the glass back again and the bottle is hermetically closed. To fill the bottle, turn the stopper half-way round, and there being a slot or indentation, it is easily pulled out. The bottle is arranged both for the

sliding and screw syringes. A dozen half-drachm bottles of this kind, arranged preferably, I think, for the sliding syringe, could be placed in a small leather case, and would form a complete "Armamentarium Hypodermicum." The syringe, I think, is better carried separately; or, of course, could be provided for in the case.

The solutions I usually carry are: Morphia sulphate, sixteen grains to the ounce. Morphia and atropia mixed, containing sixteen grains of morphia and one-half grain of sulphate of atropia to the ounce. Sulphate of atropia, two grains to the ounce. Sulphate of strychnia, two grains to the ounce. Wernich's solution of ergot, one minim of which equals four grains of ergot. Hydrochlorate of quinia, one minim containing one-quarter grain. Chloral, one minim containing one grain. Iodide of mercury and sodium, five minims containing one-sixtieth of a grain. Liquor sodæ arseniatis, four grains to the ounce. Strong solution of ammonia. Fleming's tincture of aconite, and a two per cent. solution of carbolic acid.

With these dozen bottles, one is prepared for any emergency, and the solutions can be preserved indefinitely if they are prepared with chloroform water.

I. L. Crawcour, M.D.

New Orleans, Sept. 29, 1876.

Toothache Remedy.

Theo. Ricksecker, of 28 Beekman Street, has for sale a neat apparatus for introducing his "One Minute Cure" for toothache into a carious cavity. The extreme point of the tube having been broken off, slight pressure on the india-rubber bulb causes the fluid to run out in drops. A piece of cork slipped over the end of the tube prevents any loss when the tube is not in use. One dozen in a flat box are furnished to the trade for $1.75, and should be very valuable stock.

Brush-holding Rubber Stopple.

Mr. F. Alfred Reichardt, of 404 Fourth Ave., N. Y., has put upon the market a very useful little article which will doubtless find a ready sale. It is a tapering rubber stopper, intended for bottles containing acids, iodine, collodion, varnish, mucilage, marking-ink, and various other preparations which either attack ordinary corks or make glass stoppers impracticable. The lower or inner part of the stopper is provided with a tapering hole to receive the handle or quill of the brush, various sizes of which may be used. The brush remains suspended in the liquid and is kept soft, while at the same time the contents of the bottle are kept air-tight and from evaporating. The accompanying cut shows the contrivance, with this difference: that it is not a notch in the stopper but a central hole.

NEW PATENTS AND LAWS.

TRADE-MARKS REGISTERED IN U. S. PATENT OFFICE.

Certificates dated July 18, 1876.

3,847. **Homœopathic Cocoa.**—Beatson J. Bell, Brooklyn, N. Y., "a belt, circular in form, with the words 'Bell's Homœopathic Cocoa' printed upon it, forms the border. Within this border is represented a bell with the initial letter 'B' upon it. Rays of light deviate at different angles from this bell, and below it, and within the circle formed by the belt is a row of stars, which form nearly a half circle, and just without the circumference of this border is the word 'Trade-Mark.'"

3,848. **Medical Compound.**—D. E. Bent & Co., Eau Claire, Wis., "the words and letters 'Doctor Mathew's Great Idaho Indian Compound,' and the figure of an Indian represented as standing and holding in his right hand a round box."

3,849. **Healing Balsam.**—Newton M. Blackman, Danbury, Conn., "first, the name of my medicine, viz., 'Dr. Blackman's Original Healing Balsam;' second, the design and symbol of a dove, holding in its beak a twig; third, the certificate of J. Blackman in manner, form, and words as set forth; fourth, the fac-simile autograph of J. Blackman."

3,854. **Fever-and-Ague and Liver Pad.**—William F. Kidder & Co., New York, N. Y., "the bust or figure of a man, with the said 'Holman's Fever-and-Ague and Liver Pad' represented as suspended from the neck just over the pit of the stomach, and fastened around the chest next to the skin, immediately below and between the nipples, by strings, and being oval in form, with the words 'Holman's Fever-and-Ague and Liver Pad' inscribed or printed on the outside or front thereof."

3,855. **White Glycerine.**—M. F. Shaw, Jersey City, N. J., "the letter G, having within the lines forming the same the words 'White Glycerine,' with the words 'Trade Mark' and two stars, one at each end of said words, and also two stars on the arm of the top of the G, and one on the arm of the bottom of said letter."

3,858. **Liquid Vehicle for Taking Quinine.**—Baker & Brother, Brooklyn, N. Y., "word-symbol 'QUIN-ELIXIR.'"

Certificates dated July 25, 1876.

3,871. **Horse Medicines.**—Combs & Halfield, Philadelphia, Pa., "letters C and H in connection with a horse."

3,879. **Bitters and Other Medical Compounds.**—Quincy A. Scott, Pittsburgh, Pa., "word-symbol 'MONONGAHELA.'"

3,882. **Medical Preparation.**—Moses N. Wisewill, Chicago, Ill., "word-symbol 'EUPEON.'"

Certificates dated Aug. 1, 1876.

3,893. **Chemical Compounds for Making Lemonade.**—Thatcher C. Hatch, New Bedford, Mass., "word 'BEVARAGINE.'"

3,894. **Medical Compound.**—Bernard O. Holtermann, Sydney, New South Wales, "words 'LIFE DROPS.'"

3,895. **Medical Compound.**—George Housel, Williamsport, Pa., "a large capital letter 'O,' in the centre of which, extending from the top of the inside of said letter to the bottom, in a vertical line, are the capital letters 'B W G,' and upon the shading of said letter 'O,' on the left hand, is the word 'Trade,' in capital letters, and upon the shading of said letter 'O,' on the right hand, is the word 'Mark' in capital letters."

3,899. **Ointment for Sweaty Feet.**—John Little & Co., Piedmont, West Va., "words 'Little's Original Ointment for Sweaty Feet,' together with a scene representing a man afflicted with sweaty feet, seated upon a chair in a room, in his shirt-sleeves, withdrawing his boots, while his wife and child are represented as being driven back by the unpleasant consequences attending the act, and stand manifesting their disgust by holding their nostrils.

3,903. **Meat-Juice and a Compound of Meat-Juice and Glycerine.**—Mann S. Valentine, Richmond, Va., "the letter 'V' and the bird's nest resting thereon, containing eggs."

3,904. **Liquid for Dispelling Insects from Plants, etc.**—Samuel W. Watts, Franklinton, N. C., "word-symbol 'INSECT-ENEMY.'"

3,906. **Bitters.**—Emil F. Whitte, Brooklyn, N. Y., "word-symbol 'PALM.'"

Certificates dated Aug. 8, 1876.

3,909. **Liniment.**—Patterson & Potts, Brooklyn, N. Y., "words 'Eagle Liniment,' the eagle, and the combination of the letters and symbol 'P. & P.'"

3,918. **Medicinal Pads or Girdles.**—Noe & Forbes, Cincinnati, Ohio, "the figure of a shield."

3,919. **Remedy for the Piles.**—Antonio Pelletier, Washington, D. C., "the monogram or compound letters 'A. P.' within a circular border."

Certificates dated Aug. 15, 1876.

3,927. **Perfumery.**—Buck & Rayner, Chicago, Ill., "word-symbol 'MARS.'"

3,928. **Perfume known as "Florida Water."**—Byrne Brothers & Co., New York, N. Y., "the representation of a fountain which projects from a bank of flowers, on which two female figures are represented in reclining attitude."

3,936. **Insect-Powder.**—Sholes and Morse, Rochester, N. Y., "the letters S. E. I. E. (the initials of 'Sholess' Excelsior Insect Exterminator'), embodied in a monogram in which the letter 'S' is the centre, intersected vertically by the letter 'I,' projecting some distance above and below, and with the two letters 'E E,' having their base upon the centre letter 'I,' and projecting respectively to the right and left, a bar crossing centrally to complete the two letters 'E E.'"

LABELS REGISTERED IN THE U. S. PATENT OFFICE.

Certificate dated July 18, 1876.

791. "**John Dwight & Co.'s Soda.**"—John Dwight & Co., New York, N. Y.

Certificates dated July 25, 1876.

796. "**Dr. Boerhaave's Balsam of Blood Root.**"—J. Tyler Jackson & Co., Baltimore, Md.

797. "**Jackson's Celebrated Indian Remedy for Pain.**"—Samuel Jackson, Liberty, Ind.

801. "**Madame Jacques' Pearl Cream.**"—Strong & Smith, Ashtabula, Ohio.

803. "**Dr. Holt's Compound Elixir of Peruvian Bark.**"—Holt & Whitney, Portland, Me.

Certificates dated Aug. 1, 1876.

805. "**Dr. C. Delery's Indian Vegetable Fibrifuge.**"—Edgar Delery, Bay St. Louis, Miss.

806. "**Harrison's Hog and Chicken Cholera Cure.**"—R. G. Harrison, Olathe, Kansas.

807. "**Dr. I. H. Hughey & Co.'s Great Female Remedy.**"—I. H. Hughey & Co., Memphis, Tenn.

808. "**Bread of Life.**"—H. W. Munson, Providence, R. I.

Certificates dated Aug. 8, 1876.

810. "**Bradwell's Portable Lemonade (Concentrated).**"—J. Clarke Bradwell, Boston, Mass.

811.—"**Beach's Improved Buffalo Sticky Fly-Paper.**"—Elias W. Beach, Buffalo, N. Y.

812. "**The Queen's Imperial Toilet-Bath.**"—Thomas P. Thorpe, New York, N. Y.

Certificate dated Aug. 15, 1876.

815. "**Dr. Goodman's Vegetable Compound Ague Specific.**"—Charles H. Goodman, Terre Haute, Ind.

NEW PATENTS.

[*We will furnish gratis, to subscribers, any information relating to new patents which can be obtained from the Official Gazette of the Patent Office; and for* 50*c. will give copies of the drawings of such as are illustrated.*]

Patents granted June 20, 1876.

178,839. **Remedies for Fever and Ague.**—Archibald McIntyre De Witt, Pittston, Pa.

178,840. **Remedies for Colds, &c.**—Archibald McIntyre De Witt, Pittston, Pa.

178,907. **Oil and Liquor Pumps.**—William L. Carlsen, Chicago, Ill.

178,913. **Compositions or Cements for Preserving Fruits, &c.**—Charles A. Dards, New York, N. Y.

178,919. **Processes for Treating Tannin Juices.**—James Foley, Montreal, Canada.

178,935. **Remedies for Hog-Cholera.**—C. B. Lake, Indianola, Iowa.

178,972. **Liquid Filters.**—Robert Stewart, Brooklyn, N. Y.

178,997. **Funnel Tongs.**—George B. Clarke, Leonardsville, N. Y.

179,018. **Processes and Apparatus for Manufacturing Hydrogen Gas.**—Jas. M. Hirsh, Chicago, Ill.
179,028. **Artificial Leeches.**—Friedrick Klee, Brooklyn, N. Y.

Patents granted June 27, 1876.

179,090. **Corkscrews.**—Joshua Barnes, Brooklyn, N. Y.
179,096. **Fluid-measures and Pumps Combined.**—Wm. H. Clark and Wm. J. Clark, Salem, Ohio.
179,124. **Evaporating-pans.**—Thos. McQuiston, Morning Sun, Ohio.
179,184. **Magneto-Electric Machines.**—Jim Billings Fuller, New York, assignor by mesne assignments to Henry Kip, Brooklyn, N. Y.
179,204. **Nursing-Bottle Valves.**—Albert M. Knapp and Horace Knapp, Providence, R. I.
179,218. **Bottle-Capping Machines.**—William Pitt, Baltimore, Md., assignor of two-thirds his right to Charles A. Vogeler and A. C. Meyer, same place.
179,235. **Paint-Oils.**—William E. Vary, DeWitt, Iowa.
179,238. **Oil-Tanks.**—Stephen Webster, St. Catharine's, Canada.
179,267. **Nozzles for Cans.**—George H. Chinnock, Brooklyn, N. Y.
179,321. **Bath-Tub Attachments for Steam, Hot-Air, or Vapor Bathing.**—W. C. Kidney and A. H. Kidney, New York, N. Y.
179,358. **Liniments for Rheumatism.**—O'Shane and James Kearney, San Francisco, Cal.
179,366. **Soap-Compounds.**—T. H. Startzman, Tiffin, Ohio.
179,383. **Druggists' Graduated Measures.**—Edward L. Whitte, White Mills, Pa.

Patents granted July 4, 1876.

179,414. **Compressed Air-Bath Apparatus.**—Daniel Kelly, Chicago, Ill.
179,416. **Nursing-Bottles.**—William Kennish, New Brunswick, N. J.
179,433. **Tooth-Powder Boxes.**—Oscar Twitchell, Philadelphia, Pa.
179,460. **Bottle-Holders.**—E. F. Meany, Boston, Mass.
179,468. **Barrel Taps and Faucets.**—E. F. Barlow, San Francisco, Cal.
179,492. **Cocks and Faucets.**—Amos C. Springer, San Francisco, Cal.
179,502. **Compounds for Manufacturing Crucibles.**—Henry Baggeley, Fulham, assignor to John S. Leigh, London, England.
179,536. **Apparatus for Saving Soda Ash.**—John W. Dixon, West Manayunk, Pa.
179,538. **Instruments for Aiding Animals in Giving Birth.**—William Dulin, Big Grove, Iowa.
179,576. **Cement.**—William D. Latham, Angelica, N. Y.
179,579. **Treating and Revivifying Bone-Black, or Animal Charcoal.**—O. Lugo, Jersey City, N. J.
179,583. **Fountains for Containing Aerated Beverages.**—John Mathews, New York, N. Y.
179,584. **Apparatus for Dispensing Soda-Water, etc.**—John Mathews, New York, N. Y.
179,596. **Faucets.**—Mirand Obermiller, Toledo, Ohio.
179,623. **Heating Apparatus.**—Edward W. Sturdy, Providence, R. I.

Re-issued.

7,207; 7,208; 7,209; 7,210. **Electro-Galvanic Chains, Bands, etc.**—Isaac Lewis Pulvermacher, London, England, assignor to John E. Hetherington, Cincinnati, Ohio.

Patents granted July 18, 1876.

179,842. **Weighing-Buckets.**—P. Deland, Little Cooley, Pa.
179,857. **Fruit-Driers.**—Hampton Kelly, Multnoma Co., Oregon.
179,864. **Oil and Liquid Pumps.**—Hugh M. Parshall, Tidioute, Pa.
179,883. **Processes and Apparatus for Rendering Fats.**—Wm. E. Andrew, New York, N. Y.
179,892. **Mucilage-Holders.**—Joseph V. Browne, New York, N. Y., assignor to himself and G. W. Ross, Magog, Canada.
179,911. **Combined Liquid-Pumps and Funnels.**—Henry A. Guignon, Corry, Pa.
179,921. **Fruit-Driers.**—Samuel W. Hope, Dover, Del.
179,929. **Methods of Destroying Insects.**—S. Loeser and I. Loeser, of Trier, Prussia.
179,930. **Blue-Dyes.**—G. Molt, Millbury, Mass.
179,950. **Syringes.**—J. S. Parsons, Indianapolis, Ind., assignor to himself and J. H. Yundt, same place.
179,960. **Production and Treatment of Resin.**—Adolphe Rock, New Orleans, La., assignor of one-half his right to E. Vorster, same place.
179,967. **Paint Compositions.**—Jacob B. Schlieter, Kalamazoo, Mich.
179,970. **Inhalers.**—Robert L. Steen, Topeka, Kansas, assignor of one-fourth of his right to himself and three-fourths to A. M. Edison, same place.
176,990. **Compositions for Paint.**—Gustave Barret and Alexandre d'Adhemar, Pointe-a-Pitre, Island of Gaudeloupe.
179,995. **Nursing-Bottle Supports.**—Jno. W. Bray, Middletown, Conn.
180,003. **Fruit-Driers.**—David E. Colman, Washington, D. C.
180,012. **Remedies for Hog-Cholera.**—Allen May Dunn, Oquawka, Ill.
180,024. **Inhaling and Disinfecting Apparatus.**—John R. Harper, Clerkenwell, England.
180,029. **Atomizers.**—Thomas J. Holmes, Boston, Mass.
180,039. **Cartouches for Dressing Wounds.**—Leon Kipps, Brussels, Belgium.
180,043. **Inhalers.**—Jeremiah S. Letts, Ripon, Wis.
180,082. **Magneto-Electric Machines.**—Edward Weston, Newark, N. J.

Patents granted July 25, 1876.

180,132. **Bottle-Attachments.**—Benj. F. Hoare and Andrew J. Bastine, New York, N. Y.
180,135. **Insect-Powder Guns or Injectors.**—Chas. T. Jewett, New York, N. Y.
180,155. **Combined Vapor-Burners and Surgical Instruments.**—C. A. Paquelin, Paris, France.
180,303. **Remedies for Hog-Cholera.**—William J. Woods, Elmwood, Ill.
180,318 **Process of Preserving Fruit.**—Lyman Bradley, Buffalo, N. Y.
180,328. **Depurator-Baths.**—William Curran, Toledo, Ohio.
180,368. **Funnel Filters.**—Daniel D. Paul and J. G. Ramer, Philadelphia, Pa.

Patents granted Aug. 1, 1876.

180,418. **Remedies for Constipation, etc.**—George S Coleman, Dallas, Texas.
180,441. **Evaporating Apparatus.**—Jas. E. Weaver, Pittsburgh. Pa.
180,467. **Purifying Spirits of Turpentine.**—Louis Jos. Duroux, Paris, France.
180,479. **Vent-Bungs.**—Alois J. Klein, Cincinnati, Ohio.
180,551. **Bottle-Stoppers.**—Jos. Connor, New York, N. Y.
180,559. **Bottle-Corking Machines.**—A. De Mestre, Bordeaux, France.

Patents granted Aug. 8, 1876.

180,708. **Eye Glasses.**—Harry Fowler, Washington, D. C.
180,770. **Machines for Crushing Oleaginous Seeds.**—A. B. Lawther, Chicago, Ill.
180,842. **Spirometers.**—William H. Burt, Chicago, Ill.
180,901. **Apparatus for the Manufacture of Hydrated Sulphurous Acid.**—William Maynard, Salem, Mass.
180,926. **Brush-Holding Rubber Stopples.**—Ferdinand Reichardt, New York, N. Y.
180,935. **Invalid-Bedsteads.**—Franklin E. Sawyer, Hyde Park, Vt.

180,937. **Bottle-Washers.**—William Scherenberg, New York, N. Y.

180,962. **Apparatus for Manufacturing Solar Salt.**—Theo. R. Timby, Tarrytown, N. Y.

180,988. **Carbonic-Acid-Gas Generators.**—Otto Zwietusch, Milwaukee, Wis.

Patents granted Aug. 15, 1876.

181,016. **Eye-Glasses.**—John S. Spencer, New York, N. Y.

181,024. **Composition of Borated Cotton for Preserving.**—Charles G. Am Ende, Hoboken, N. J.

181,026. **Cork-Fasteners for Bottles.**—Walter D. Balcom, Providence, R. I.

181,103. **Fountains for Mineral or other Waters.**—Alvin D. Puffer, Boston, Mass.

181,120. **Microscopes.**—Jos. Zentmayer, Philadelphia, Pa.

181,220. **Pistons for Syringes, Air-Pumps, etc.**—Reinhold Vander Emde, New York, N. Y., assignor to himself and Charles E. Koechling, same place.

PRESCRIPTIONS AND FORMULÆ.

Formulæ for the Administration of Tar.

MR. MAGNES-LAHENS gives the following very full list of preparations of tar:*

1. *Tar Powder:*
   Tar..... 1 part.
   Fir-, or Pine-sawdust..... 2 parts.
   Mix intimately and keep protected from the air.

2. *Tar-Bath:*
   Tar-powder..... ½ pound.
   Warm water..... 36 gallons.

3. *Tar-water, dilute:*
   Tar-powder..... 135 grains.
   Water at 60° C..... 1 quart.
   Infuse in a close vessel; when cold, strain.

4. *Tar-water, concentrated:*
   Tar-powder..... 1 ounce.
   Water at 60° C..... 1 quart.
   Infuse as before. For external use.

5. *Tar-wine:*
   Tar-powder..... 5 drachms.
   Madeira (or other generous wine)..... 1 quart.
   Macerate and filter. Dose, a small wineglassful.

6. *Tar syrup:*
   Tar-water, concentrated..... 1 part.
   Sugar..... 2 parts.
   Dissolve the sugar in the tar-water in a close l vessel at a gentle heat, and strain. Dose, a tablespoonful.

7. *Tar-lozenges:*
   Tar..... 50 parts.
   Gum-arabic, powdered..... 12 "
   Honey..... 5 "
   Tar-water, concentrated..... 18 "
   Marshmallow-root, powdered..... 90 "
   Make a mucilage with the gum, honey, and water; incorporate with it the tar, and afterward the marshmallow, and form the mass into 1,000 pills, or dragees, which are to be coated with sugar. Each contains 0.05 gm. (7-10 gr.) of tar.

8. *Tar-elixir:*
   Tar..... 50 parts.
   Sugar..... 100 "
   Alcohol, 60 per cent..... 1,000 "
   Dissolve and filter.

9. *Tar-glycerole:*
   Tar..... 10 parts.
   Glycerine.....
   Yolk of egg, ää..... 15 "
   Mix the yolk of egg with the glycerine in a mortar, and incorporate with it the tar.

10. *Tar-poultice:*
    Strew tar-powder upon a flaxseed-poultice.

In addition to these some formulæ are given for tar-inhalations, fumigations, and embrocations, which it is not necessary to specify more fully.

* We have converted the French weights and measures into the nearest United States values.

A Prescription for Incontinence of Urine.—Mr. N. Brenchley recommends the following:

℞ Tinct. ergotæ..... ♏ x.
Tinct. ferri perchloridi..... ♏ v.
Spts. chloroformi..... ♏ v.
Infus. quassiæ..... ad ℥ i.
Ter die sumendum.

NOTES, QUERIES AND ANSWERS.

[*Under this heading we shall, to the best of our ability, endeavor to answer such questions addressed to us as come within the scope of this journal, providing they are accompanied by the name and address of the writer. Answers to queries received after the 5th of the month will lie over until the next issue.*]

Iodine and Oil and Turpentine. (J. R. B., M.D., Hamilton, O.).—The action of iodine upon oil of turpentine varies somewhat with the proportions in which they are brought together. In cold oil of turpentine, iodine dissolves with dark green color at first, but a violent explosion soon takes place (especially if a part of the solid be in contact with air), yellow or violet vapors are evolved, and an acid resin is left behind. The vapors consist mainly of iodine and hydriodic acid. When one part of iodine and eight parts of oil of turpentine are brought together, best in a confined space of air, as under a bell-jar, the iodine is converted, in the course of three days, into a dark red resin, having a balsamic odor, and also an odor of iodine—being evidently a substitution-product, one or more atoms of iodine having replaced as many atoms of hydrogen, which combines with some of the free iodine to hydriodic acid—and hydriodous (according to some, -ic acid) floats upon the resin; and after a week, if the flask be filled with oil of turpentine, a brownish liquid, having a balsamic odor separates from it. This red resin has acid properties, forming a salt with potassa, which by dry distillation yields vapors of iodine and a thick oil, like oil of mace, while charcoal and a small quantity of potassium iodide remain behind.

Decolorized Iodine. (Same.)—In decolorizing an alcoholic solution of iodine with ammonia, a number of products are obtained, among which the chief one is ammonium iodide, besides small quantities of ethyl iodide, ammonium iodate, and, according to the late researches of W. H. Darling (see above, p. 275), iodoform. The presence of carbolic acid is not necessary to produce discoloration; but its presence is likely to increase the amount of iodoform, at least from theoretical grounds. Compare our paper on Iodoform, on page 40. Iodine and carbolic acid do not react in the cold, except after standing for some time; the latter dissolves large quantities of iodine.

Replies to your other queries will be given in one of next issues.

Syrupus Althææ. (S.).—If you prepare your syrup according to the formula of the German Pharmacopœia, and keep it in full, well-closed bottles, you will have no trouble in keeping it for a considerable time without souring.

The formula is: Take of cut marshmallow-root 1 part, wash it with cold distilled water, pour upon it 20 parts of cold *distilled* water and macerate two hours, then strain, *without expressing*, through flannel. To 15 parts of this liquid add 24 parts of best white sugar, and dissolve without heat. The formulæ in other Pharmacopœias commonly prescribe to boil the root with about 8 times its weight of water down to one-half, previous to adding the sugar; but the syrup prepared in this manner does not keep nearly so well; however, by incorporating with the concentrated liquid, when cold, the white of one egg, then adding the sugar and once more raising to the boiling point, and straining when nearly cold, a syrup is obtained, which, in keeping qualities, is hardly inferior to the above mentioned. Another method of preventing fermentation might suggest itself to you by perusing the article on the "Preservation of Syrups by Salicylic Acid" on page 297.

Color for Show-bottles. (S.). *Blue:* Copper sulphate, 1 drachm; water, one gallon; ammonia, sufficient to redissolve the precipitate formed; alcohol, 2 or 3 pints. The shade depends upon the amount of copper used.—*Red:* Carmine, dissolved in water of ammonia, a sufficient quantity; water, 1 gallon; alcohol, 2 or 3 pints.—*Green:* Nickel nitrate, 1 oz.; water, 1 gallon; alcohol, 2 or 3 pints.—*Violet:* Mix the *blue* and *red* liquids in suitable proportions.—Many shades of color may be produced by aniline colors, but in order to prevent their fading and precipitation, the addition of large proportions of alcohol is necessary, which is somewhat dangerous, as the bottles are generally placed before a light. Others have recommended the addition of about 1 oz. of alum to a gallon of aniline solution. The addition of alcohol to all these liquids is necessary to prevent them from freezing in cold weather.

Hydrargyrum Bisulphuricum. (G. R., N. Y.).—By an oversight your query has failed to receive an answer in our last number. Bisulphate of mercury, HgO_2, $2SO_3$, or according to the new system: Mercuric sulphate, $HgSO_4$ is the product formed by acting with boiling sulphuric acid upon metallic mercury. It is the first step towards the preparation of calomel and corrosive sublimate, if prepared by the process of the U. S. Ph. It is a heavy, white crystalline powder decomposed when coming in contact with water into a soluble acid sulphate and a yellow insoluble basic sulphate known as turpeth mineral (Hydrargyri Sulphas flava). Bisulphate of mercury is used as an excitant in Marié-Davy's carbon-zinc battery.

Filtering Material for Colored Essences. (G. & L. Balt.)—We do not recognize in your description of the supposed mineral substance anything we are at all familiar with. If the same annoyance which you complain about should happen to us, we would try the various filtering materials in use, and among them we believe some would be found to fulfil your purposes. We would suggest to you to use white felt with animal charcoal, or well-washed slag-wool. Under certain circumstances it might be best to remove the changed coloring matter entirely by the cautious use of alcoholic solution of lead acetate, and to recolor the liquid anew.

Sclerotic Acid. (W. T. G., M.D., Chicago)—We are unable at present to say whether any of this new substance, the supposed active principle of ergot discovered by Dragendorff, is to be obtained in this city. Dr. Friedrich Witte of Rostock reports very favorably on it (in Hager's Pharm. Centralt. 1876, 293), and we have no doubt, that it will soon make its appearance on the market. How long it will last we do not dare to predict; but certainly Dragendorff's authority is of great weight.

Coloring Matters for Articles of Consumption. (G. I. H., New Bedford.)—We do not believe that the yellow color on *all* ham-coverings is injurious. A consignment of "Cincinnati" hams sent to France not long ago has been condemned, and all further importation of American *colored* hams been interdicted, because it was found that the coloring matter of the covers contained chromate of lead. We hardly think that this is a common custom, as cases of poisoning would have been more frequently reported hitherto. We had occasion on page 236 to mention incidentally a few coloring matters which the French Sanitary Police permits to be used in confectionery and colored liquors; a more complete list is the following: *blue:* indigo and its derivatives, Prussian blue; *red:* cochineal, carmine, Brazil wood, orseille; *yellow:* saffron, French berries (fruit of *Rhamnus infectoria* L.), Persian berries (fruit of *Rhamnus amygdalina* L.), quercitron (coloring matter of bark of (*Quercus tinctoria*), yellowroot (*Xanthorrhiza apiifolia*), turmeric; *green:* mixture of Prussian blue with one of the yellow colors, or with logwood; *violet:* Prussian blue with carmine.

We would suggest to some of our readers to examine the yellow coloring matter of ham-coverings as found in our market, and to report on it.

ITEMS.

College of Pharmacy of the City of New York.—The forty-seventh session of this college was inaugurated on Monday, Sept. 27th, with an introductory address by Prof. P. W. Bedford, there being at good attendance. The class of 1876–1877 promises to be quite as large, if not larger, than that of previous years, and it is hoped that the members will fully avail themselves of the facilities offered them for acquiring information. Every student should join the quiz, and should employ his leisure hours at home, remembering, that although toil and hard work may be his lot at present, the time is rapidly coming when only the well-informed will be allowed to reap the harvest. It is quite probable that, by concerted action of the various colleges, the standard of qualification will be gradually raised, so as to include, besides the knowledge heretofore required, other branches as yet left to the option of the students. The examinations of graduates will be so conducted as to convey to the examiners an exact knowledge of the capabilities and acquirements of the candidates, both as to theory and to practice. Therefore—*carpe diem!*

The Board of Trustees met on Oct. 5, and transacted mostly routine business. The Lecture Committee reported that arrangements for the usual Conversational Meetings were in course of preparation, and would be duly announced.

A meeting of the members of the college will be held on Thursday evening, Oct. 19, at 7.30 P.M. Punctual attendance is requested.

The Latest Chemical Discovery.—*The Chemical News* of August 18th contains the marvellous announcement that "an establishment has been opened in Belgium for extracting *the wool from grease*, and that the *yield of wool* is understood to be large." It is greatly to be lamented that the details of this curious process have not been given; but possibly, as the *Analyst* suggests, the method may resemble in some degree that used for the extraction of sunbeams from cucumbers. The wonders of science appear to be illimitable.

Scientific Union of French Pharmacists (Union Scientifique des Pharmaciens de France) is the title of a new society formed exclusively for scientific purposes in Paris.

Short-beam analytical balances are coming into use now. Mendelejeff first drew attention to the superior accuracy and more rapid action of this style of balance, and there can be no doubt that they will eventually take the place of those now in use. They may be had of four sizes, to carry 20, 200, 500, and 1,000 gm. in each pan, from the manufacturer, O. Wolters, 55 Upper Marylebone street, Portland Place, London, W.

Illegal Practice of Medicine in France.—The Correctional Tribunal of Paris has given judgment in a charge against a man named Charles Gayot, styling himself an electrician, and residing in Paris, for having in 1875 and

1876 illegally exercised the practice of medicine 328 times, and for having within the same period sold medicines without a legal title. The question was whether the use of electricity in ailments constituted the practice of medicine. The tribunal found in the affirmative, and sentenced the defendant to 328 fines of three francs each, and another of five hundred francs (£20) for the illegal practice of pharmacy, and to pay in addition 3,200 francs (£128) damages to the complainant, a man named Mallet, who from time to time had paid that sum to the defendant for electrical applications and medicines. The law against the practice of medicine by unqualified persons is thus seen to be much more severe and much more effectual in France than in Great Britain.—*Brit. Med. Jour.*

Prizes.—The *Capuron* prize of the Academy of Medicine in Paris, for 1877, of 2,000 francs, is offered for the best thesis on "Chloral in the Treatment of Eclampsia." The *Barbier* prize of 3,000 francs has for its subject "The discovery of means of curing certain diseases generally regarded as incurable, such as hydrophobia, cancer, epilepsy, scrofula, etc." The *St. Leger* prize of 1,500 francs, "For the procuring of bronchocele in animals, by the administration of substances derived from the water or soil of countries where goître prevails;" and the *Rufz de Lavison* prize of 2,000 francs, "An essay on the effects of acclimatization on man and animals."

The Preparatory School of Medicine and Pharmacy, which has existed at Lille, has been replaced by a Faculty of Medicine and Pharmacy, with a complete staff of professors in all departments of medical science.

Poisoning by Fuchsine, used for coloring wines, is reported by Dr. Bergeret, of St. Etienne Hospital, Lyons, to have occurred in a number of workmen.

Cod-Liver Oil.—One and a quarter million gallons of cod-liver oil have been made in Newfoundland this season.

The British Stamp Duty on patent medicines produced during the year 1875-76 a revenue to the Government of £123,136.

A New Grape Fungus, which first appears on the leaves of the grape-vine in the form of a minute yellow spot, was described by Dr. Engelmann at a recent meeting of the St. Louis Academy of Science. It makes its appearance just before and during the flowering period, as far as known, attacking only the leaves, or rarely the petioles and peduncles. It kills the leaves, and thus cripples the plant, and attacks all varieties indiscriminately.

In the sugar plantations of Natal the large python is employed to keep down rats and mice.

Epsom Salts and Oxalic Acid.—The *Chemist and Druggist* for July has the following: "A talented American has discovered nearly 25 per cent. of Epsom salts in a cask of oxalic acid, and some people are delighted with the information, because they think they will now be less likely to get poisoned when a druggist's boy gives them oxalic acid for Epsom salts in the usual course. One of the journals says: 'This is certainly something new in the adulteration line.' Dear, innocent America! why, we played that little game here even before they thought of wooden nutmegs over there."

The British Pharmacopœia.—The *British Med. Journ.* says: "The Medical Council are about to issue a reprint of 5,000 copies of the *British Pharmacopœia*, making a total of 35,000 since the first publication of the edition of 1867." The appendix which has since been published is not to be incorporated, since it would disturb the paging and general arrangement of the present work.

Waterproof Paper of superior quality, transparent and impervious to fat, may be prepared by saturating good paper with a liquid prepared by dissolving shellac at a moderate heat in a saturated solution of borax. Paper thus prepared resembles parchment, and may be colored by various aniline colors.

Oleum Jecoris Aselli Ferratum, of the new Supplement to the Swiss Pharmacopœia, is prepared by dissolving 1 part of ferric benzoate in 100 parts of cod-liver oil.

Scientific Grants.—The Scientific Grants Committee of the British Medical Association have, during the year, awarded the following amounts, among others, to investigators in the field of therapeutics:—Dr. Crichton Browne: "On the Action of Nitrite of Amyl alone and in combination with other Remedies" £17. Dr. McKendrick and Mr. James Dewar: "Physiological Action of Chinoline and Pyridine Compounds," £20. Dr. McKendrick: "Antagonism of Medicines," £30. Dr. Milner Fothergill: "The Effect of Certain Agents upon the Circulation," £10 Dr. Spencer: "The Action of Uranium Salts in Diabetes," £10. Dr. Munroe: "An Antidote of Chloroform," £3. The Committee recommended that £300 be set aside for scientific grants during 1877, of which amount Dr. Browne was to have £7, and Dr. Fothergill £20, to enable them to continue their investigations, and Dr. William Stirling £15, to assist his "Researches in the Physiological Action of Certain Substances on the Spinal Cord," and Drs. Spencer and Shaw £10, to further their study of "The Action of Uranium Salts in Diabetes."

Imports of Cod-Liver Oil.—The consumption of this article, as a restorative, is increasing. The import, from Norway particularly, is much greater.

The importations the past year at this port, as reported at the Custom House, may be detailed as follows:

Cod oil	25,737 gals.
Cod-liver oil	13,418 "

In cases—1,121 packages (which includes oil put up in bottles and the Norway oil in tin cases), to wit:

Moller's, 475 cs.	68,400 bottles.
De Jongh's, 190 cs.	19,000 "
All others, 50 cs.	7,200 "
Total	94,600 "
Norway, 406 cs.	12,180 gals.

Counting six bottles to the gallon, there must then be put up, from importations at this port alone, at least 150,000 bottles. This, added to the oil imported in bottles, makes about 250,000 bottles of imported oil at this port.

Petroleum in Japan.—Petroleum is found in the districts to the northwest of Tokio, as, for instance, in Yechigo, Shinano, Ugo, etc. In the first of these provinces oil was discovered 300 years ago; and it has always been counted among the seven wonders of Yechigo that a natural combustible gas issued from the ground in certain places, and could be brought through bamboo pipes into the interior of the houses and used for illuminating purposes, as it is now used for heating the small stills for refining the crude oil. Although the presence of the oil has been known for a long time, the people of the country only began to use it forty-six years ago.' Since then, no less than 508 wells have been sunk.

Cinchona Experiments in Japan.—In the last quarterly report respecting the Dutch Government cinchona plantations in Java, it is stated that an attempt is to be made to acclimatize the cinchona in Japan. An application has been received from the Japanese Government for a supply of young plants for the purpose, and a selection of specimens of the best varieties in the Dutch plantations has accordingly been forwarded.

Haï-thao, or gelose, is the name of a fibrous substance derived from an alga occurring in Cochin-China and Mauritius, used for furnishing cotton materials. It is insoluble in cold, but soluble in boiling water to a thin transparent solution, gelatinizing on cooling.

Heracline, or heraklin, the new blasting powder, is composed of picric acid, saltpetre, nitrate of soda, sulphur, and sawdust. It has been tried with success in the coal mines of France and Austria, and it is said the gases produced by its combustion are not injurious, while it burns comparatively slowly, so that it only tears apart the masses blasted, without hurling them about.